SERVICE MANUAL

FIELD SERVICE

magicolor 2590MF

2007.08

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

FIELD SERVICE TOTAL CONTENTS

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SAFETY AND IMPORTANT WARNING ITEMS

Read carefully the Safety and Important Warning Items described below to understand them before doing service work.

IMPORTANT NOTICE

Because of possible hazards to an inexperienced person servicing this product as well as the risk of damage to the product, KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. (hereafter called the KMBT) strongly recommends that all servicing be performed only by KMBT-trained service technicians.
Changes may have been made to this product to improve its performance after this Service Manual was printed. Accordingly, KMBT does not warrant, either explicitly or implicitly, that the information contained in this Service Manual is complete and accurate.
The user of this Service Manual must assume all risks of personal injury and/or damage to the product while servicing the product for which this Service Manual is intended.
Therefore, this Service Manual must be carefully read before doing service work both in the course of technical training and even after that, for performing maintenance and control of the product properly.
Keep this Service Manual also for future service.

DESCRIPTION ITEMS FOR DANGER, WARNING AND CAUTION

In this Service Manual, each of three expressions "⚠ **DANGER**", "⚠ **WARNING**", and "⚠ **CAUTION**" is defined as follows together with a symbol mark to be used in a limited meaning.
When servicing the product, the relevant works (disassembling, reassembling, adjustment, repair, maintenance, etc.) need to be conducted with utmost care.

⚠ **DANGER: Action having a high possibility of suffering death or serious injury**

⚠ **WARNING: Action having a possibility of suffering death or serious injury**

⚠ **CAUTION: Action having a possibility of suffering a slight wound, medium trouble, and property damage**

Symbols used for safety and important warning items are defined as follows:

△ **:Precaution when servicing the product.**	**General precaution**	**Electric hazard**	**High temperature**
⊘ **:Prohibition when servicing the product.**	**General prohibition**	**Do not touch with wet hand**	**Do not disassemble**
● **:Direction when servicing the product.**	**General instruction**	**Unplug**	**Ground/Earth**

SAFETY WARNINGS

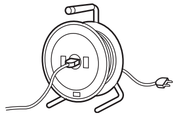
[1] MODIFICATIONS NOT AUTHORIZED BY KONICA MINOLTA BUSINESS TECHNOLOGIES, INC.

KONICA MINOLTA brand products are renowned for their high reliability. This reliability is achieved through high-quality design and a solid service network.
Product design is a highly complicated and delicate process where numerous mechanical, physical, and electrical aspects have to be taken into consideration, with the aim of arriving at proper tolerances and safety factors. For this reason, unauthorized modifications involve a high risk of degradation in performance and safety. Such modifications are therefore strictly prohibited. the points listed below are not exhaustive, but they illustrate the reasoning behind this policy.

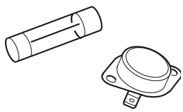
Prohibited Actions

⚠DANGER

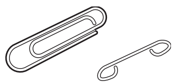
- Using any cables or power cord not specified by KMBT.



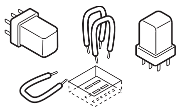
- Using any fuse or thermostat not specified by KMBT. Safety will not be assured, leading to a risk of fire and injury.



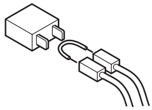
- Disabling fuse functions or bridging fuse terminals with wire, metal clips, solder or similar object.



- Disabling relay functions (such as wedging media between relay contacts)

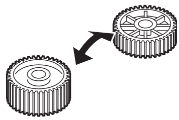


- Disabling safety functions (interlocks, safety circuits, etc.) Safety will not be assured, leading to a risk of fire and injury.



- Making any modification to the product unless instructed by KMBT

- Using parts not specified by KMBT



[2] POWER PLUG SELECTION

In some countries or areas, the power plug provided with the product may not fit wall outlet used in the area. In that case, it is obligation of customer engineer (hereafter called the CE) to attach appropriate power plug or power cord set in order to connect the product to the supply.

Power Cord Set or Power Plug

⚠ WARNING

- Use power supply cord set which meets the following criteria:
  - provided with a plug having configuration intended for the connection to wall outlet appropriate for the product's rated voltage and current, and
  - the plug has pin/terminal(s) for grounding, and
  - provided with three-conductor cable having enough current capacity, and
  - the cord set meets regulatory requirements for the area.

  Use of inadequate cord set leads to fire or electric shock.



- Attach power plug which meets the following criteria:
  - having configuration intended for the connection to wall outlet appropriate for the product's rated voltage and current, and
  - the plug has pin/terminal(s) for grounding, and
  - meets regulatory requirements for the area.

  Use of inadequate cord set leads to the product connecting to inadequate power supply (voltage, current capacity, grounding), and may result in fire or electric shock.

- Conductors in the power cable must be connected to terminals of the plug according to the following order:
  - Black or Brown: L (line)
  - White or Light Blue: N (neutral)
  - Green/Yellow: PE (earth)

  Wrong connection may cancel safeguards within the product, and results in fire or electric shock.

[3] CHECKPOINTS WHEN PERFORMING ON-SITE SERVICE

KONICA MINOLTA brand products are extensively tested before shipping, to ensure that all applicable safety standards are met, in order to protect the customer and customer engineer (hereafter called the CE) from the risk of injury. However, in daily use, any electrical equipment may be subject to parts wear and eventual failure. In order to maintain safety and reliability, the CE must perform regular safety checks.

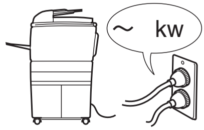
1. Power Supply

Connection to Power Supply

⚠ WARNING

- Check that mains voltage is as specified.
  Connection to wrong voltage supply may result in fire or electric shock.

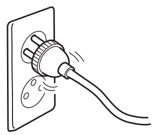
- Connect power plug directly into wall outlet having same configuration as the plug.
  Use of an adapter leads to the product connecting to inadequate power supply (voltage, current capacity, grounding), and may result in fire or electric shock.
  If proper wall outlet is not available, advice the customer to contact qualified electrician for the installation.



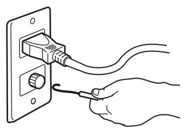
- Plug the power cord into the dedicated wall outlet with a capacity greater than the maximum power consumption.
  If excessive current flows in the wall outlet, fire may result.

- If two or more power cords can be plugged into the wall outlet, the total load must not exceed the rating of the wall outlet.
  If excessive current flows in the wall outlet, fire may result.

- Make sure the power cord is plugged in the wall outlet securely.
  Contact problems may lead to increased resistance, overheating, and the risk of fire.



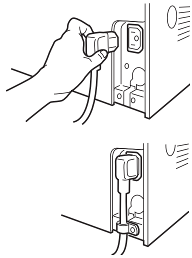
- Check whether the product is grounded properly.
  If current leakage occurs in an ungrounded product, you may suffer electric shock while operating the product.
  Connect power plug to grounded wall outlet.



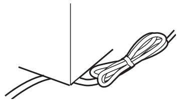
Power Plug and Cord

⚠ WARNING

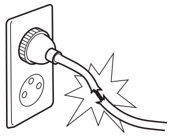
- When using the power cord set (inlet type) that came with this product, make sure the connector is securely inserted in the inlet of the product.
  When securing measure is provided, secure the cord with the fixture properly.
  If the power cord (inlet type) is not connected to the product securely, a contact problem may lead to increased resistance, overheating, and risk of fire.



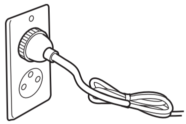
- Check whether the power cord is not stepped on or pinched by a table and so on.
  Overheating may occur there, leading to a risk of fire.



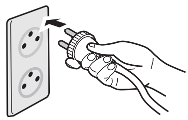
- Check whether the power cord is damaged. Check whether the sheath is damaged.
  If the power plug, cord, or sheath is damaged, replace with a new power cord (with plug and connector on each end) specified by KMBT. Using the damaged power cord may result in fire or electric shock.



- Do not bundle or tie the power cord.
  Overheating may occur there, leading to a risk of fire.

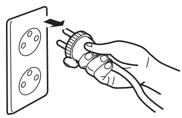


- Check whether dust is collected around the power plug and wall outlet.
  Using the power plug and wall outlet without removing dust may result in fire.



- Do not insert the power plug into the wall outlet with a wet hand.
  The risk of electric shock exists.

- When unplugging the power cord, grasp the plug, not the cable.
  The cable may be broken, leading to a risk of fire and electric shock.

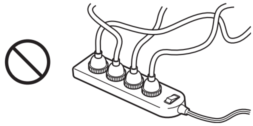


Wiring

⚠ WARNING

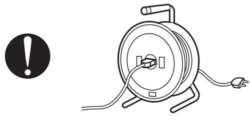
- Never use multi-plug adapters to plug multiple power cords in the same outlet.

  If used, the risk of fire exists.



- When an extension cord is required, use a specified one. Current that can flow in the extension cord is limited, so using a too long extension cord may result in fire.

  Do not use an extension cable reel with the cable taken up. Fire may result.



2. Installation Requirements

Prohibited Installation Places

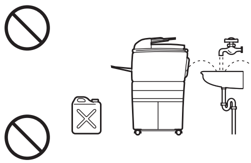
⚠ WARNING

- Do not place the product near flammable materials or volatile materials that may catch fire.

  A risk of fire exists.

- Do not place the product in a place exposed to water such as rain.

  A risk of fire and electric shock exists.

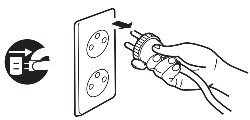


When not Using the Product for a long time

⚠ WARNING

- When the product is not used over an extended period of time (holidays, etc.), switch it off and unplug the power cord.

  Dust collected around the power plug and outlet may cause fire.



Ventilation

⚠ CAUTION

- The product generates ozone gas during operation, but it will not be harmful to the human body.

  If a bad smell of ozone is present in the following cases, ventilate the room.

  a. When the product is used in a poorly ventilated room
  b. When taking a lot of copies
  c. When using multiple products at the same time



Stability

⚠ CAUTION

- Be sure to lock the caster stoppers.

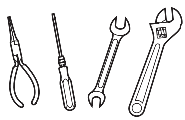
  In the case of an earthquake and so on, the product may slide, leading to a injury.

Inspection before Servicing

⚠ CAUTION

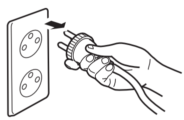
- Before conducting an inspection, read all relevant documentation (service manual, technical notices, etc.) and proceed with the inspection following the prescribed procedure, using only the prescribed tools. Do not make any adjustment not described in the documentation.

  If the prescribed procedure or tool is not used, the product may break and a risk of injury or fire exists.



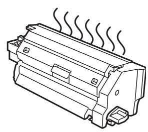
- Before conducting an inspection, be sure to disconnect the power plugs from the product and options.

  When the power plug is inserted in the wall outlet, some units are still powered even if the POWER switch is turned OFF. A risk of electric shock exists.



- The area around the fixing unit is hot.

  You may get burnt.

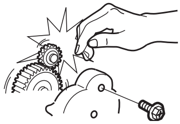


Work Performed with the Product Powered On

⚠ WARNING

- Take every care when making adjustments or performing an operation check with the product powered.

  If you make adjustments or perform an operation check with the external cover detached, you may touch live or high-voltage parts or you may be caught in moving gears or the timing belt, leading to a risk of injury.



- Take every care when servicing with the external cover detached.

  High-voltage exists around the drum unit. A risk of electric shock exists.

Safety Checkpoints

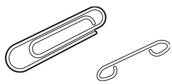
⚠ WARNING

- Check the exterior and frame for edges, burrs, and other damage.

  The user or CE may be injured.

- Do not allow any metal parts such as clips, staples, and screws to fall into the product.

  They can short internal circuits and cause electric shock or fire.



- Check wiring for squeezing and any other damage.

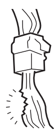
  Current can leak, leading to a risk of electric shock or fire.

- Carefully remove all toner remnants and dust from electrical parts and electrode units such as a charging corona unit.

  Current can leak, leading to a risk of product trouble or fire.

- Check high-voltage cables and sheaths for any damage.

  Current can leak, leading to a risk of electric shock or fire.



Safety Checkpoints

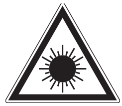
⚠ WARNING

- Check electrode units such as a charging corona unit for deterioration and sign of leakage.

  Current can leak, leading to a risk of trouble or fire.

- Before disassembling or adjusting the write unit (P/H unit) incorporating a laser, make sure that the power cord has been disconnected.

  The laser light can enter your eye, leading to a risk of loss of eyesight.

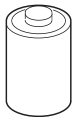


- Do not remove the cover of the write unit. Do not supply power with the write unit shifted from the specified mounting position.

  The laser light can enter your eye, leading to a risk of loss of eyesight.

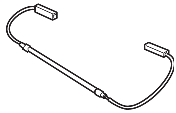
- When replacing a lithium battery, replace it with a new lithium battery specified in the Parts Guide Manual. Dispose of the used lithium battery using the method specified by local authority.

  Improper replacement can cause explosion.



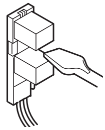
- After replacing a part to which AC voltage is applied (e.g., optical lamp and fixing lamp), be sure to check the installation state.

  A risk of fire exists.



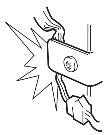
- Check the interlock switch and actuator for loosening and check whether the interlock functions properly.

  If the interlock does not function, you may receive an electric shock or be injured when you insert your hand in the product (e.g., for clearing media jam).



- Make sure the wiring cannot come into contact with sharp edges, burrs, or other pointed parts.

  Current can leak, leading to a risk of electric shock or fire.

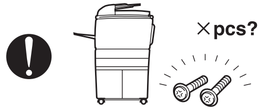


Safety Checkpoints

⚠ WARNING

- Make sure that all screws, components, wiring, connectors, etc. that were removed for safety check and maintenance have been reinstalled in the original location. (Pay special attention to forgotten connectors, pinched cables, forgotten screws, etc.)

  A risk of product trouble, electric shock, and fire exists.



Handling of Consumables

⚠ WARNING

- Toner and developer are not harmful substances, but care must be taken not to breathe excessive amounts or let the substances come into contact with eyes, etc. It may be stimulative.

  If the substances get in the eye, rinse with plenty of water immediately. When symptoms are noticeable, consult a physician.

- Never throw the used cartridge and toner into fire.

  You may be burned due to dust explosion.

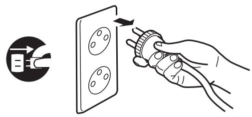


Handling of Service Materials

⚠ CAUTION

- Unplug the power cord from the wall outlet.

  Drum cleaner (isopropyl alcohol) and roller cleaner (acetone-based) are highly flammable and must be handled with care. A risk of fire exists.



- Do not replace the cover or turn the product ON before any solvent remnants on the cleaned parts have fully evaporated.

  A risk of fire exists.

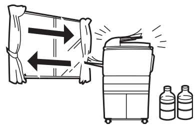


Handling of Service Materials

CAUTION

- Use only a small amount of cleaner at a time and take care not to spill any liquid. If this happens, immediately wipe it off.
  A risk of fire exists.

- When using any solvent, ventilate the room well.
  Breathing large quantities of organic solvents can lead to discomfort.



[4] Laser Safety

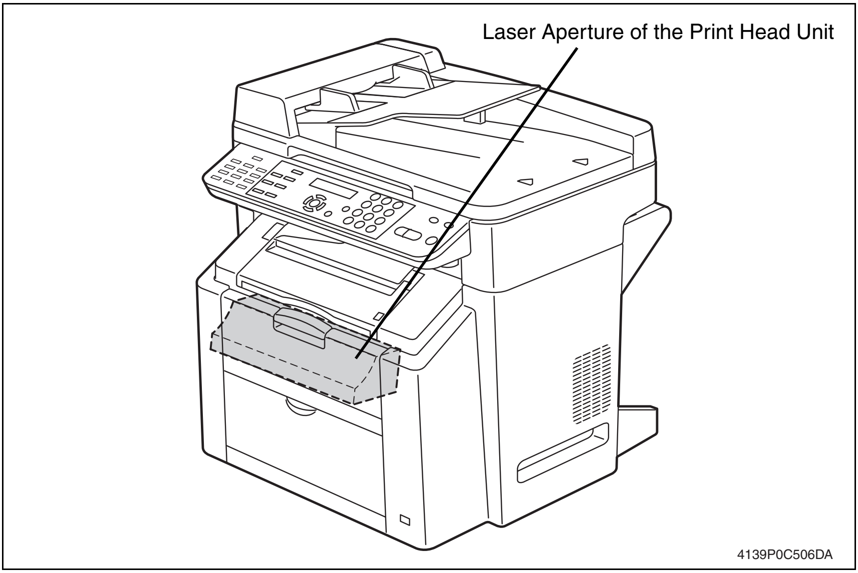
- This is a digital machine certified as a class 1 laser product. There is no possibility of danger from a laser, provided the machine is serviced according to the instruction in this manual.

4.1 Internal Laser Radiation

Semiconductor laser	
Maximum power of the laser diode	10 mW
Maximum average radiation power(*)	7.5 μW
Wavelength	775 - 800 nm

*:Laser Aperture of the Print Head Unit

- This product employs a Class 3b laser diode that emits an invisible laser beam. The laser diode and the scanning polygon mirror are incorporated in the print head unit.
- The print head unit is NOT A FIELD SERVICE ITEM. Therefore, the print head unit should not be opened under any circumstances.



the U.S.A., Canada (CDRH Regulation)

- This machine is certified as a Class I Laser product under Radiation Performance Standard according to the Food, Drug and Cosmetic Act of 1990. Compliance is mandatory for Laser products marketed in the United States and is reported to the Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration of the U.S. Department of Health and Human Services (DHHS). This means that the device does not produce hazardous laser radiation.
- The label shown to page S-16 indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

⚠ **CAUTION**

- **Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.**

Semiconductor laser	
Maximum power of the laser diode	10 mW
Wavelength	775 - 800 nm

All Areas

⚠ **CAUTION**

- **Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.**

Semiconductor laser	
Maximum power of the laser diode	10 mW
Wavelength	775 - 800 nm

Denmark

⚠ **ADVARSEL**

- **Usynlig Laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling. Klasse 1 laser produkt der opfylder IEC60825 sikkerheds kravene.**

Halvlederlaser	
Laserdiodens højeste styrke	10 mW
Bølgelængden	775 - 800 nm

Finland, Sweden

⚠ **VARO!**

- **Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.**

LOUKAN 1 LASERLAITE **KLASS 1 LASER APPARAT**

⚠ **VAROITUS!**

- **Laitteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.**

Puolijohdelaser	
Laserdiodin suurin teho	10 mW
Aallonpituus	775 - 800 nm

⚠ **VARNING!**

- **Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laser-klass 1.**

Halvledarlaser	
Den maximala effekten för laserdioden	10 mW
Våglängden	775 - 800 nm

⚠ **VARNING!**

- **Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.**

Norway

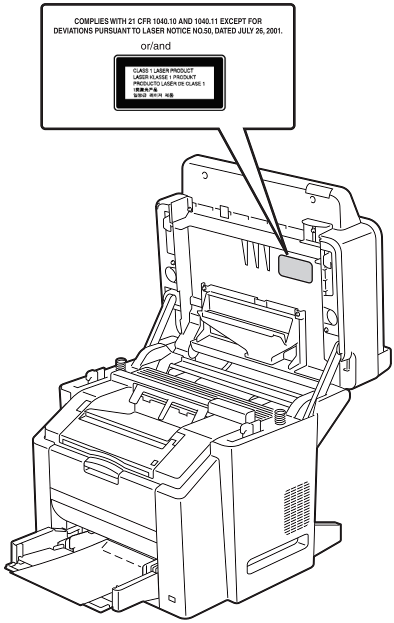
⚠ **ADVERSEL**

- **Dersom apparatet brukes på annen måte enn spesifisert i denne bruksanvisning, kan brukeren utsettes for unsynlig laserstråling som overskrider grensen for laser klass 1.**

Halvleder laser	
Maksimal effekt till laserdiode	10 mW
Bølgelengde	775 - 800 nm

4.2 Laser Safety Label

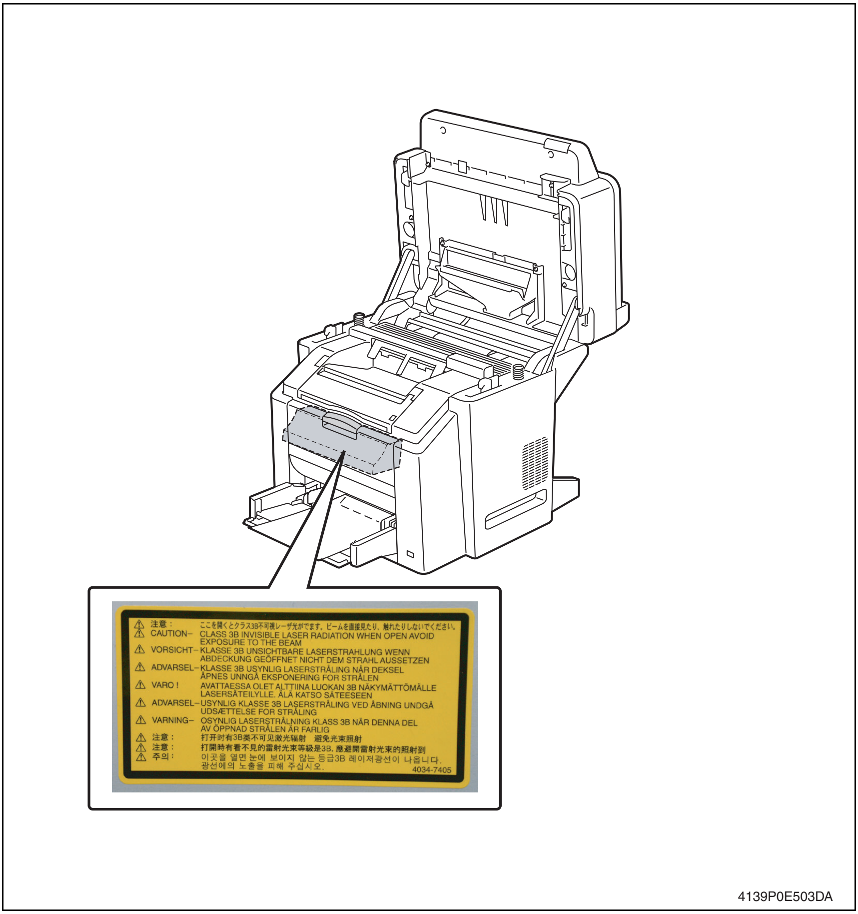
- A laser safety labels is attached to the outside of the machine as shown below.



4139P0E501DA

4.3 Laser Caution Label

- A laser caution label is attached to the inside of the machine as shown below.

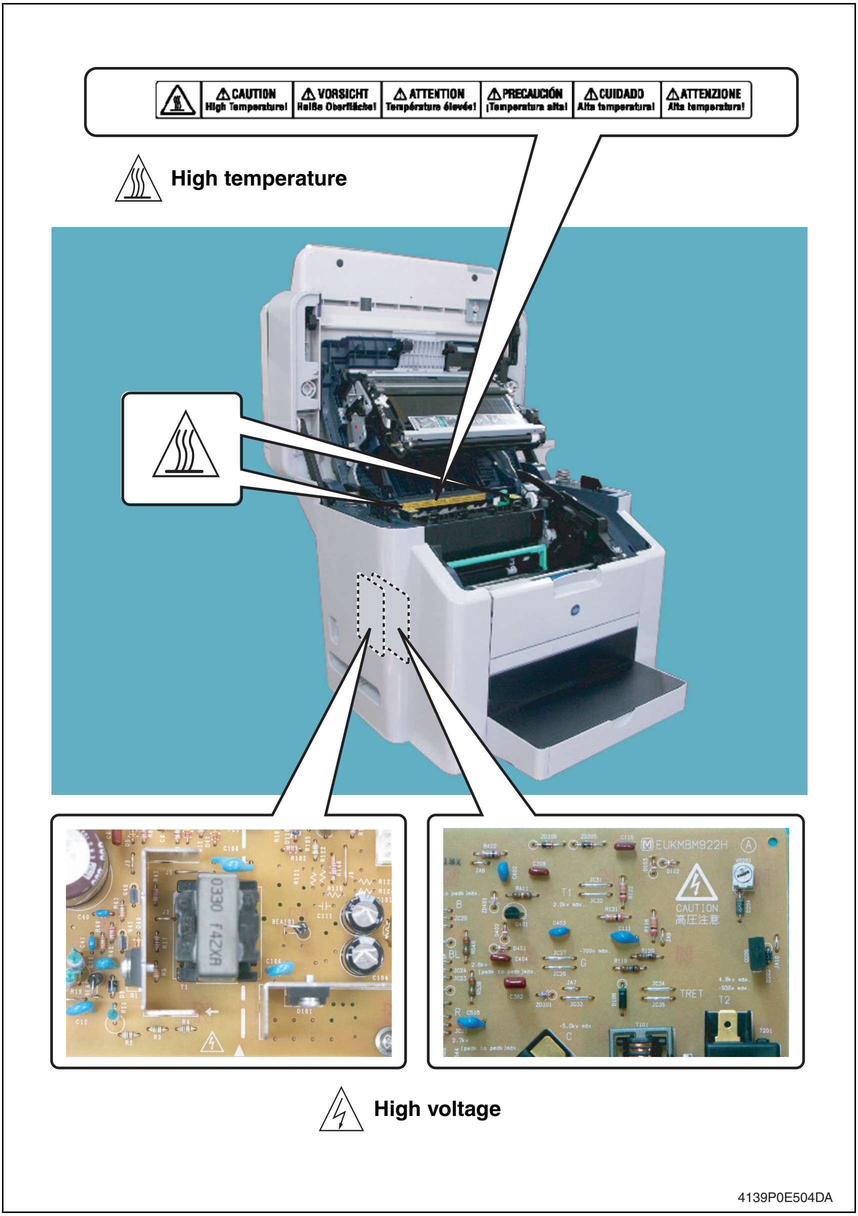


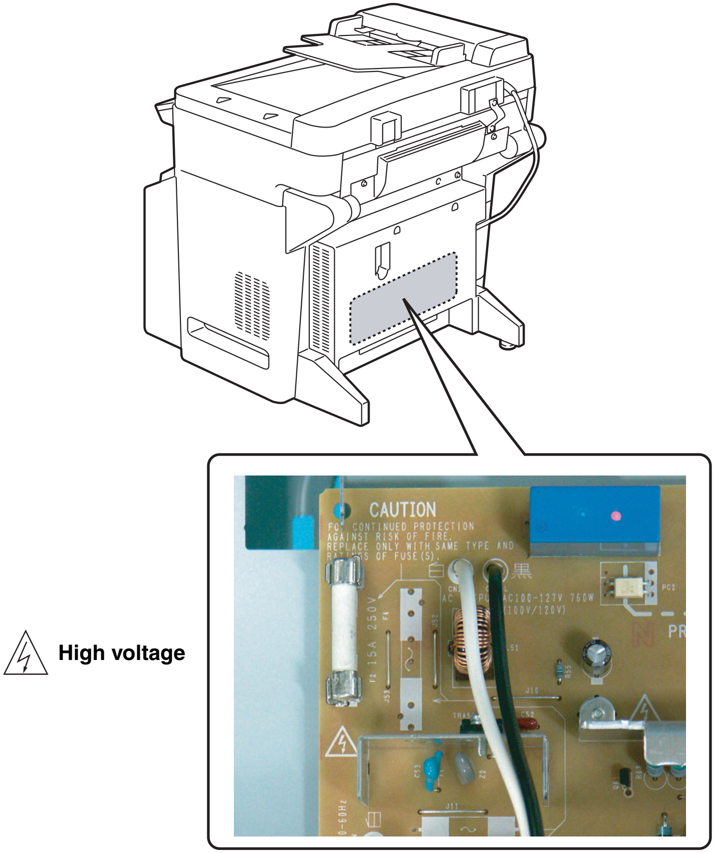
4.4 Precautions For Handling The Laser Equipment

- When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.
- When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the copier OFF.
- If the job requires that the copier be left ON, take off your watch and ring and wear laser protective goggles.
- A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user’s premises.

WARNING INDICATIONS ON THE MACHINE

Caution labels shown are attached in some areas on/in the machine.
When accessing these areas for maintenance, repair, or adjustment, special care should be taken to avoid burns and electric shock.





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⚠ CAUTION:

- **You may be burned or injured if you touch any area that you are advised not to touch by any caution label. Do not remove caution labels. If any caution label has come off or soiled and therefore the caution cannot be read, contact our Service Office.**

MEASURES TO TAKE IN CASE OF AN ACCIDENT

1. If an accident has occurred, the distributor who has been notified first must immediately take emergency measures to provide relief to affected persons and to prevent further damage.
2. If a report of a serious accident has been received from a customer, an on-site evaluation must be carried out quickly and KMBT must be notified.
3. To determine the cause of the accident, conditions and materials must be recorded through direct on-site checks, in accordance with instructions issued by KMBT.
4. For reports and measures concerning serious accidents, follow the regulations specified by every distributor.

Composition of the service manual

This service manual consists of Theory of Operation section and Field Service section to explain the main machine and its corresponding options.

Theory of Operation section gives, as information for the CE to get a full understanding of the product, a rough outline of the object and role of each function, the relationship between the electrical system and the mechanical system, and the timing of operation of each part.

Field Service section gives, as information required by the CE at the site (or at the customer's premise), a rough outline of the service schedule and its details, maintenance steps, the object and role of each adjustment, error codes and supplementary information.

The basic configuration of each section is as follows. However some options may not be applied to the following configuration.

<Theory of Operation section>

OUTLINE:	Explanation of system configuration, product specifications, unit configuration, and paper path
COMPOSITION/OPERATION:	Explanation of configuration of each unit, operating system, and control system

<Field service section>

GENERAL:	Explanation of system configuration, and product specifications
MAINTENANCE:	Explanation of service schedule, maintenance steps, service tools, removal/reinstallation methods of major parts, and firmware version up method etc.
ADJUSTMENT/SETTING:	Explanation of utility mode, service mode, and mechanical adjustment etc.
TROUBLESHOOTING:	Explanation of lists of jam codes and error codes, and their countermeasures etc.
APPENDIX:	Parts layout drawings, connector layout drawings, timing chart, overall layout drawing are attached.

Notation of the service manual

A. Product name

In this manual, each of the products is described as follows:

(1)	IC board:	Standard printer
(2)	magicolor 2590MF:	Main body
(3)	Microsoft Windows 98:	Windows 98
	Microsoft Windows Me:	Windows Me
	Microsoft Windows NT 4.0:	Windows NT 4.0 or Windows NT
	Microsoft Windows 2000:	Windows 2000
	Microsoft Windows XP:	Windows XP
	Microsoft Windows Vista:	Windows Vista

When the description is made in combination of the OS's mentioned above:

Windows 98/Me
Windows NT 4.0/2000
Windows NT/2000/XP/Vista
Windows 98/Me/ NT/2000/XP/Vista

B. Brand name

The company names and product names mentioned in this manual are the brand name or the registered trademark of each company.

C. Feeding direction

- When the long side of the media is parallel with the feeding direction, it is called short edge feeding. The feeding direction which is perpendicular to the short edge feeding is called the long edge feeding.
- Short edge feeding will be identified with [S (abbreviation for Short edge feeding)] on the media size. No specific notation is added for the long edge feeding.
  When the size has only the short edge feeding with no long edge feeding, [S] will not be added to the media size.

<Sample notation>

Media size	Feeding direction	Notation
A4	Long edge feeding	A4
	Short edge feeding	A4S
A3	Short edge feeding	A3

KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

magicolor 2590MF

Main body

2007.08

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

Revision history

After publication of this service manual, the parts and mechanism may be subject to change for improvement of their performance.
Therefore, the descriptions given in this service manual may not coincide with the actual machine.

When any change has been made to the descriptions in the service manual, a revised version will be issued with a revision mark added as required.

Revision mark:

- To indicate clearly a section revised, show △1 to the left of the revised section.
  A number within △1 represents the number of times the revision has been made.

- To indicate clearly a section revised, show ▲1 in the lower outside section of the corresponding page.
  A number within ▲1 represents the number of times the revision has been made.

NOTE

Revision marks shown in a page are restricted only to the latest ones with the old ones deleted.

- When a page revised in Ver. 2.0 has been changed in Ver. 3.0:
  The revision marks for Ver. 3.0 only are shown with those for Ver. 2.0 deleted.
- When a page revised in Ver. 2.0 has not been changed in Ver. 3.0:
  The revision marks for Ver. 2.0 are left as they are.

2007/08	1.0	—	Issue of the first edition
Date	Service manual Ver.	Revision mark	Descriptions of revision

CONTENTS

magicolor 2590MF Main body

General

Maintenance

Adjustment/Setting

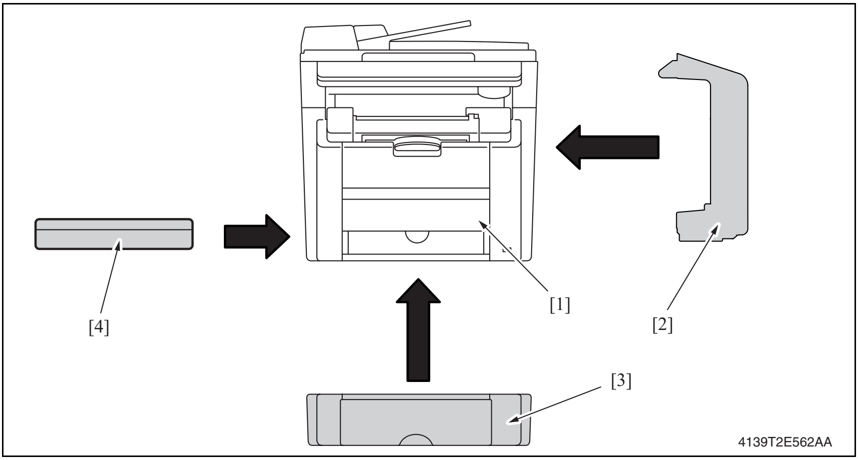
Troubleshooting

Appendix

General

1. System configuration

Machine front view



[1]	magicolor 2590MF	[3]	Lower feeder unit
[2]	Duplex option	[4]	Dust cover *

*: Standard for U.S.A and Europe

2. Product specifications

A. Type

Type	Desktop
Printing system	Semiconductor laser and electrostatic image transfer to plain paper
Exposure system	2 laser diodes and polygon mirror
PC drum type	OPC (organic photo conductor)
Photoconductor cleaning	Blade cleaning system
Scan resolution	600 x 600 dpi, 600 x 300 dpi
Print resolution	2400 x 600 dpi, 1200 x 600 dpi, 600 x 600 dpi
Copy resolution	600 x 600 dpi
Platen	Stationary
Original scanning	Scanning in main scanning direction with a CCD
Registration	Rear left edge
Paper feeding system	Tray1: 200 sheets Tray2: 500 sheets (Option)
Developing system	Single-element developing system
Charging system	DC comb electrode scorotron system
Image transfer system	Intermediate transfer belt system
Paper separating system	Curvature separation + charge-neutralizing system
Fusing system	Roller fusing
Paper exit system	Face down (Output tray capacity: 100 sheets)

B. Functions

Warm-up time	Average: 45 seconds (100 V area) Average: 49 seconds (200 - 240 V area) (at ambient temperature of 23 °C/73.4 °F and rated source voltage)	
System speed	Plain paper	126.78 mm/second
	Thick stock	63.39 mm/second
	OHP film	42.26 mm/second
First-page-out time (Plain paper)	Full color	22 seconds or less: LetterS, A4S
	Monochrome	13 seconds or less: LetterS, A4S
First copy time (Plain paper)	Full color	52 seconds (600 x 300 dpi scan)
	Monochrome	23 seconds (600 x 300 dpi scan)
Copy / Print speed (Plain paper)	Full color	5 pages/minute
	Monochrome	20 pages/minute
Tray capacities	Plain paper and letterhead : 200 sheets Transparencies, thick stock, postcards, labels stock, and glossy stock : 50 sheets Envelopes : 10 sheets	

C. Media

Type		Paper source (maximum tray capacity)	
		Tray1	Tray2 (Option)
Media type	Plain paper (60 to 90 g/m² / 16 to 24 lb)	❍ (200 sheets)	❍ (500 sheets)
	Thick stock (91 to 163 g/m² / 25 to 40 lb)	❍ (50 sheets)	—
	Transparency		
	Postcards		
	Letterhead		
	Label		
	Glossy media		
	Envelope	❍ (10 envelopes)	
Media dimensions	Width	92 to 216 mm (3 1/2 to 8 1/2 inch)	A4/Letter
	Length	148 to 356 mm (5 3/4 to 14 inch)	

D. Maintenance

Machine durability	200,000 prints or 5 years, whichever comes first

E. Machine specifications

Power requirements	Voltage:	AC 110 V to 127V -10% +6% (AC 120 V ± 10% only US/Canada) AC 220 to 240 V ±10%
	Frequency:	50 to 60 Hz ± 3 Hz
Max power consumption		1,100 W or less
Dimensions		528 (W) x 475 (D) x 531 (H) mm 20.75 (W) x 18.75 (D) x 21 (H) inch
Weight		33 kg (72.75 lb) or less 39 kg (86 lb) or less (include packing material)
Operating noise		During standby : 39 dB (A) or less During printing : 52 dB (A) or less During copying : 57 dB (A) or less (with ADF)

F. Operating environment

Temperature	10 °C to 35 °C / 50 °F to 95 °F (with a fluctuation of 10 °C / 18 °F or less per hour)
Humidity	15% to 85% (with a fluctuation of 20% or less per hour)

G. Print functions

Type	Built-in type controller	
System requirements	Personal computer	for Windows • Pentium II: 400MHz or higher
		for Macintosh • PowerPC G3 or later (G4 or later is recommended) • Intel processor
	Operating System	• Microsoft Windows XP Home Edition/Professional, Windows XP Professional x64 Edition, Windows Server 2003, Windows Server 2003 x64 Edition, Windows 2000, Windows Vista (32-bit/64-bit) • Mac OS X (10.2.8 or later; We recommend installing the latest patch)
	Free hard disk space	256 MB or more
	RAM	128 MB or more
	I/O interface	• 10Base-T/100Base-TX (IEEE 802.3) Ethernet interface port • USB Revision 2.0 and USB Revision 1.1 compliant port *The Ethernet cable and USB cable are not included with the machine.

NOTE
- **These specifications are subject to change without notice.**

2.1 Fax specifications

Resolution	Standard (203 dpi x 98 dpi)	
	Fine (203 dpi x 196 dpi)	
	Super fine (203 dpi x 392 dpi)	
Halftone level	Standard/Fine/Super fine	
	Half tone standard/Half tone fine/Half tone super fine	
Automatic reduction	Receive	Supported
	Transmit	Not supported
Compatibility	ECM/Super G3	
Modem speed	V.34 (up to 33.6 Kbps)	
Transmit speed	3 second/page (at V.34)	
Compression	MH/MR/MMR/JBIG	
Memory for receiving	4 MB for fax-RX (approx. 250 pages), (included in 32 MB NAND flash)	
Remote setting	Available via USB/Network	
Paper size	A4S, LegalS, LetterS	
Functions	One touch dial	9 one-touch key on operation panel
	Speed dial	100 fax numbers
	Group dial	9 groups (50 destination stations for one group)
	Broadcast	Available maximum 125 stations. (One-touch dial 9 stations, speed dial 100 stations, full dial 16 stations)
	Other supported functions	Timer transmission, phone book, real time clock, auto redial, reduce/split, smoothing

Blank Page

Maintenance

3. Periodic check

3.1 Maintenance parts

- To ensure that the machine produces good prints and to extend its service life, it is recommended that the maintenance jobs described in this schedule be carried out as instructed.
- Replace with reference to the numeric values displayed on the Life Counter.
- Maintenance conditions are based on A4S or 11 x 8-$^{1}/_{2}$S, Standard mode, and Preheat OFF.

3.1.1 Replacement parts

NOTE

- **The following replacement cycles are based on "3.2 Concept of parts life."**
  See P.9

A. Parts to be replaced by users (CRUs)

<table>
<tr><th>No</th><th>Classifica-tion</th><th>Part name</th><th>Qua ntity</th><th colspan="3">Replacement cycle</th><th>Ref. Page</th></tr>
<tr><td rowspan="2">1</td><td rowspan="9">Processing section</td><td rowspan="2">Toner cartridge (Shipped with printer)</td><td rowspan="2">1</td><td colspan="2">K</td><td>about 4,500 pages</td><td rowspan="2">P.13</td></tr>
<tr><td colspan="2">Y, M, C</td><td>about 1,500 pages</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">Toner cartridge (For replacement)</td><td rowspan="2">1</td><td colspan="2">Y, M, C, K</td><td>about 4,500 pages</td><td rowspan="2">P.13</td></tr>
<tr><td colspan="2">Y, M, C</td><td>about 1,500 pages</td></tr>
<tr><td rowspan="5">3</td><td rowspan="5">Drum cartridge</td><td rowspan="5">1</td><td colspan="2">Standard print *1</td><td>about 18,000 pages</td><td rowspan="5">P.16</td></tr>
<tr><td rowspan="2">Mono-chrome</td><td>Continuous print</td><td>about 45,000 pages</td></tr>
<tr><td>1P/J</td><td>about 15,000 pages</td></tr>
<tr><td rowspan="2">Color</td><td>Continuous print</td><td>about 11,250 pages</td></tr>
<tr><td>1P/J</td><td>about 7,500 pages</td></tr>
</table>

*1: Printed by 3 pages/job for monochrome and 2 pages/job for color

B. Parts to be replaced by service engineers (FRUs)

<table>
<tr><th>No</th><th>Classifi-cation</th><th>Part name</th><th>Qua ntity</th><th colspan="3">Replacement cycle</th><th>Ref. Page</th></tr>
<tr><td rowspan="5">1</td><td rowspan="6">Image transfer section</td><td rowspan="5">Transfer belt unit</td><td rowspan="5">1</td><td colspan="2">Standard print *1</td><td>about 36,800 pages</td><td rowspan="5">P.17</td></tr>
<tr><td rowspan="2">Mono-chrome</td><td>Continuous print</td><td>about 135,000 pages</td></tr>
<tr><td>1P/J</td><td>about 45,000 pages</td></tr>
<tr><td rowspan="2">Color</td><td>Continuous print</td><td>about 33,700 pages</td></tr>
<tr><td>1P/J</td><td>about 22,500 pages</td></tr>
<tr><td>2</td><td>2nd transfer roller</td><td>1</td><td colspan="3">about 120,000 prints</td><td>P.18</td></tr>
<tr><td>3</td><td>Fusing section</td><td>Fusing unit</td><td>1</td><td colspan="3">about 120,000 prints</td><td>P.20</td></tr>
<tr><td>4</td><td>Auto Doc-ument Feeder Unit</td><td>Separator pad</td><td>1</td><td colspan="3">50,000</td><td>See P.3 of the Auto Docu-ment Feeder Unit service manual.</td></tr>
</table>

*1: Printed by 3 pages/job for monochrome and 2 pages/job for color

3.1.2 Cleaning parts

A. Parts to be cleaned by the user (CRU)

<table>
<tr><th>No</th><th>Classification</th><th>Part name</th><th>Qua ntity</th><th>Replacement cycle</th><th>Ref.Page</th></tr>
<tr><td>1</td><td>Write section</td><td>PH window</td><td>1</td><td>When a malfunction occurs</td><td>P.20</td></tr>
<tr><td>2</td><td rowspan="3">Auto Docu-ment Feeder Unit</td><td>Paper feed roller</td><td>1</td><td rowspan="3">When a malfunction occurs</td><td>See P.12 of the Auto Document Feeder Unit service manual.</td></tr>
<tr><td>3</td><td>Pick-up roller</td><td>1</td><td>See P.12 of the Auto Document Feeder Unit service manual.</td></tr>
<tr><td>4</td><td>Registration roller</td><td>3</td><td>See P.13 of the Auto Document Feeder Unit service manual.</td></tr>
<tr><td>5</td><td>Tray1 paper feed section</td><td>Paper feed roller</td><td>1</td><td>When a malfunction occurs</td><td>P.10</td></tr>
<tr><td>6</td><td>Tray2 paper feed section</td><td>Paper pick-up roller</td><td>2</td><td>When a malfunction occurs</td><td>See P.10 of the Lower Feeder Unit service manual.</td></tr>
</table>

3.2 Concept of parts life

	Description	Life Value	Max. printed pages/image
Drum cartridge	The period of time during which the main motor is energized is counted.	4,500 prints	—
Fusing unit	The number of printed pages is counted.	120,000 prints	—
2nd transfer roller	The number of printed pages is counted.	120,000 prints	—
Transfer belt unit	The period of time during which the main motor is energized or the number of printed pages, whichever reaches the life value first	135,000 pages	—
Toner cartridge C/M/Y/Bk	The dot counter or the number of printed pages, whichever reaches the life value first	4,500 pages	6,000 pages

A. Conditions for life specifications values

- The life specification values represent the number of pages printed or figures equivalent to it when the given conditions (see the table below) are met. They may be more or less depending on the machine operating conditions of each individual user.

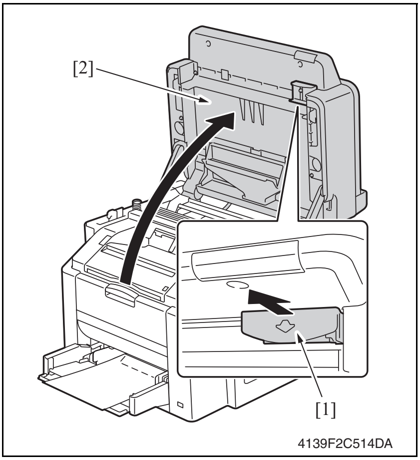
Item	Description	
Print condition	Drum cartridge	CW ratio: 5% or less
	Toner cartridge Transfer belt unit	CW ratio: monochrome continuous print at 5%
Paper size	1-sided print on A4S or 11 x 8-$^{1}/_{2}$S	

3.3 Maintenance procedure

NOTE
- **The alcohol referred to in the following procedures is isopropyl alcohol.**

3.3.1 Paper feed roller

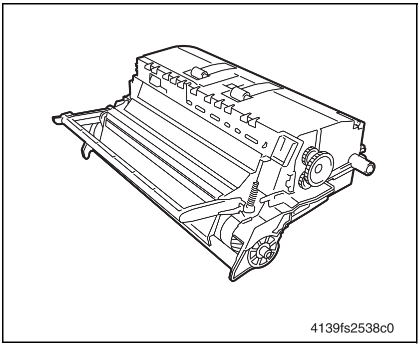
A. Cleaning procedure



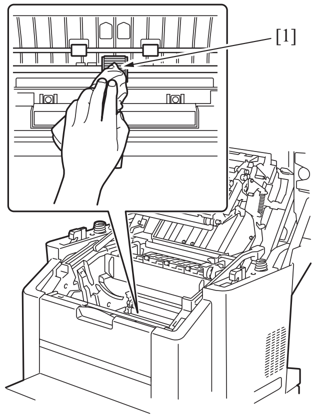
1. Pull the lever [1] and swing open the IR unit [2].

NOTE
- **Note that the IR unit cannot be swung up with the Auto Document Feeder Unit in its raised position.**

2. Open the top cover.
   See P.31
3. Remove the drum cartridge.
   See P.16



NOTE
- **Position the removed drum cartridge as shown in the illustration at the left.**
- **Be sure to keep the drum cartridge horizontal and place it where it will not become dirty.**
- **Do not leave the drum cartridge removed for more than 15 minutes, and do not place the removed drum cartridge in a location where it will be exposed to direct light (such as sunlight).**

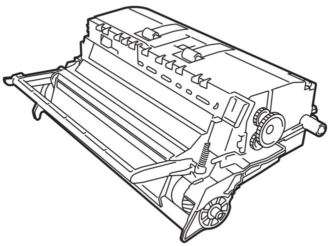


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4. Using a cleaning pad dampened with alcohol, wipe the pick-up roller [1] clean of dirt.

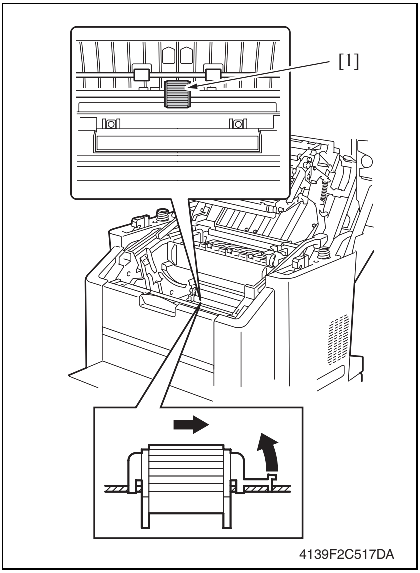
B. Removal procedure

1. Open the top cover.
   See P.31
2. Remove the drum cartridge.
   See P.16


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NOTE

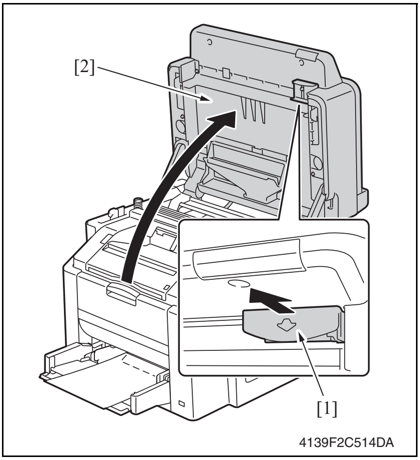
- **Position the removed drum cartridge as shown in the illustration at the left.**
- **Be sure to keep the drum cartridge horizontal and place it where it will not become dirty.**
- **Do not leave the drum cartridge removed for more than 15 minutes, and do not place the removed drum cartridge in a location where it will be exposed to direct light (such as sunlight).**



3. Remove the paper feed roller [1].

3.3.2 PH window

A. Cleaning procedure

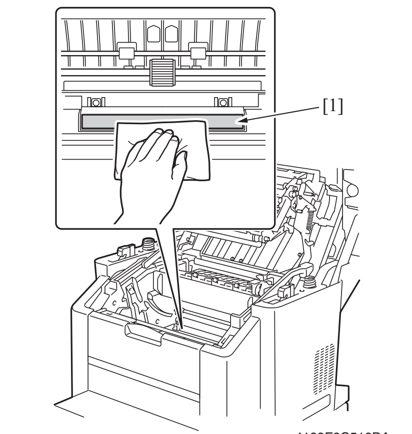


1. Pull the lever [1] and swing open the IR unit [2].

NOTE

- **Note that the IR unit cannot be swung up with the Auto Document Feeder Unit in its raised position**

2. Open the top cover.
   See P.31
3. Remove the drum cartridge.
   See P.16



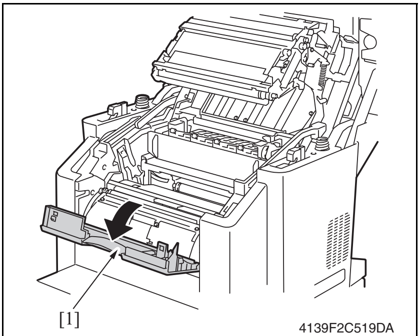
4139F2C518DA

4. Using a cleaning pad dampened with alcohol, wipe the PH window [1] clean of dirt.

3.3.3 Toner cartridge (C/M/Y/K)

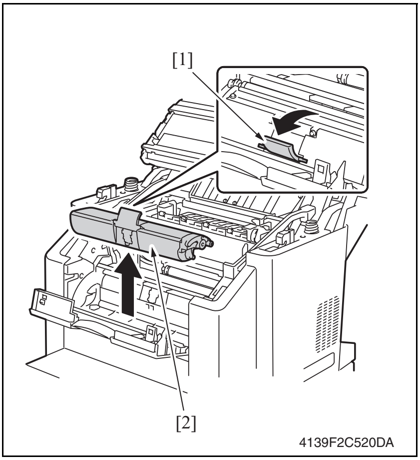
A. Removal procedure

1. Check the color of the toner cartridge to be replaced on the control panel.
2. Press the TC changer key until the color of the toner cartridge to be replaced with a new one is displayed.
3. Open the top cover.
   See P.31



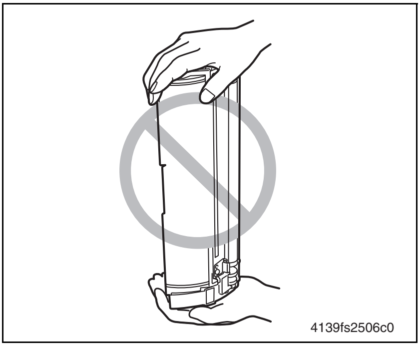
4139F2C519DA

4. Open the front cover [1] and make sure that the specific toner cartridge to be replaced is in the front.



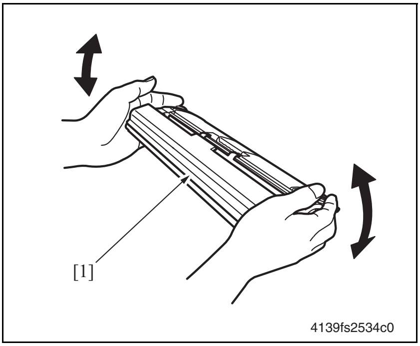
5. Hold onto the handle [1] of the toner cartridge, pull it and remove the toner cartridge [2].

B. Reinstallation procedure

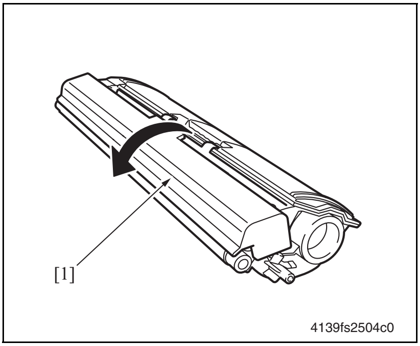


NOTE

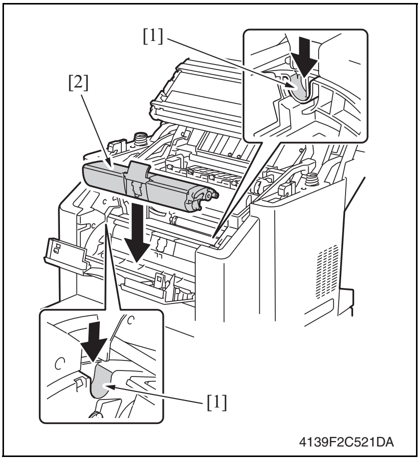
- **Do not let the toner cartridge stand upright or keep it in that upright position.**



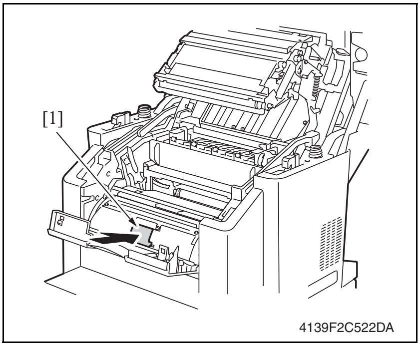
1. Prepare a new toner cartridge.
2. Shake the toner cartridge [1] a few times to distribute the toner.



3. Remove the protective cover [1].



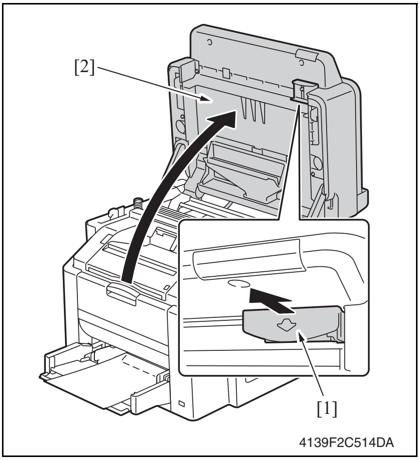
4. Aligning the shaft [1] on both sides of the toner cartridge with the rails in the machine, install the toner cartridge [2].



5. Press down on the toner cartridge until it snaps [1] into place.
6. Close the front cover.
7. Close the top cover.

3.3.4 Drum cartridge

A. Replacement procedure

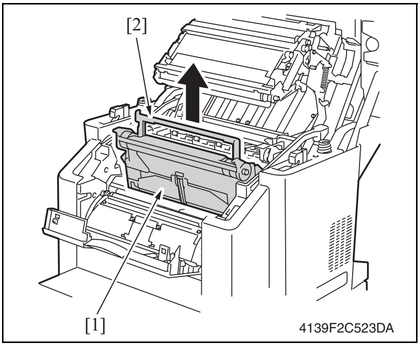


1. Pull the lever [1] and swing open the IR unit [2].

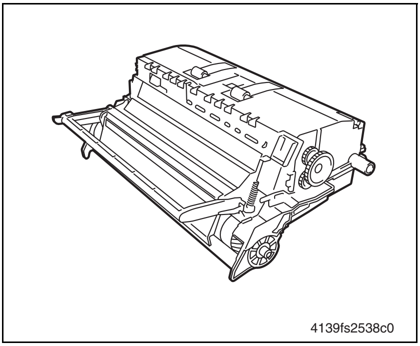
NOTE

- **Note that the IR unit cannot be swung up with the Auto Document Feeder Unit in its raised position**

2. Open the top cover.
See P.31



3. Hold onto the handle [2] of the drum cartridge [1] and slowly lift the drum cartridge out of the machine.



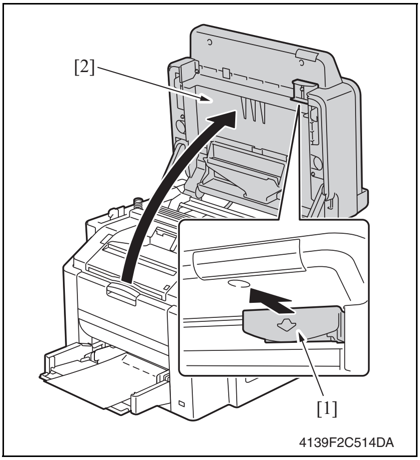
NOTE

- **Position the removed drum cartridge as shown in the illustration at the left.**
- **Be sure to keep the drum cartridge horizontal and place it where it will not become dirty.**
- **Do not leave the drum cartridge removed for more than 15 minutes, and do not place the removed drum cartridge in a location where it will be exposed to direct light (such as sunlight).**

4. To reinstall, reverse the order of removal.

3.3.5 Transfer belt unit

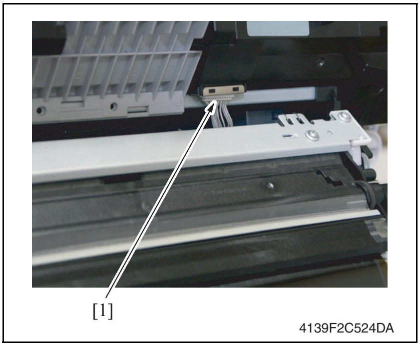
A. Replacement procedure



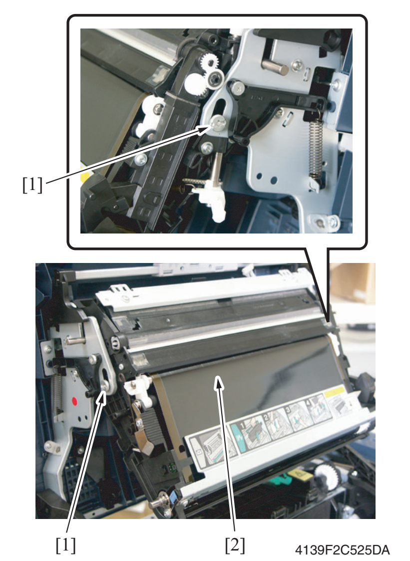
1. Pull the lever [1] and swing open the IR unit [2].

NOTE
- **Note that the IR unit cannot be swung up with the Auto Document Feeder Unit in its raised position**

2. Open the top cover.
See P.31



3. Disconnect the connector [1].



4. Remove two shoulder screws [1].
5. Remove the transfer belt unit [2].

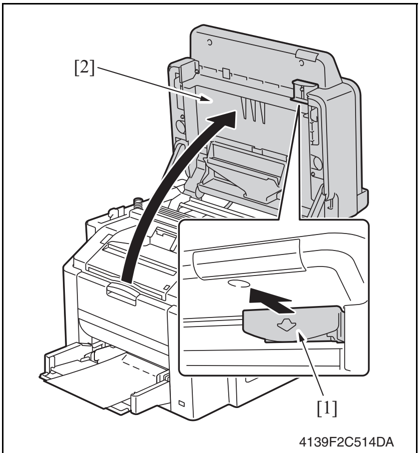
NOTE
- **When replacing the transfer belt unit, use care not to touch the surface of the belt. A scratchy or dirty belt could result in image problems.**

6. To reinstall, reverse the order of removal.

NOTE
- **After the transfer belt unit has been replaced with a new one, reset the maintenance counter of the transfer belt unit.**
  See P.111

3.3.6 2nd transfer roller

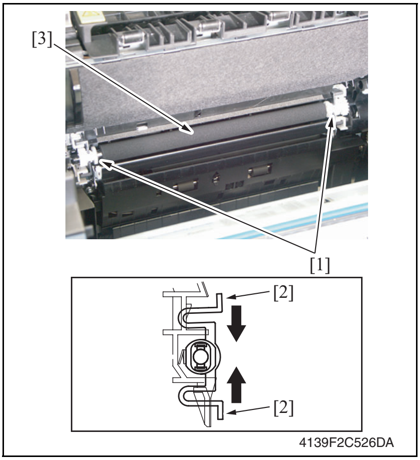
A. Replacement procedure



1. Pull the lever [1] and swing open the IR unit [2].

NOTE
- **Note that the IR unit cannot be swung up with the Auto Document Feeder Unit in its raised position**

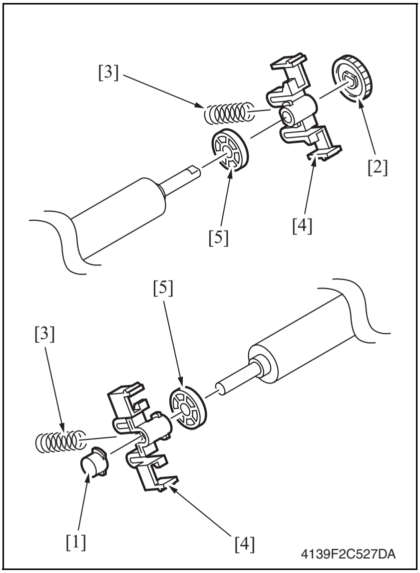
2. Open the top cover.
   See P.31
3. Remove the drum cartridge.
   See P.16



4. Remove the 2nd transfer roller assy [3] as follows. While pushing the levers [2] of the holders [1] located on both sides, pull the holders [1] to the front.

NOTE

- **Use care not to lose the two springs of the 2nd transfer roller assy. They can easily come off.**



5. Remove the conductive material [1], gear [2], two springs [3], two holders [4], and two collars [5].
6. To reinstall, reverse the order of removal.

NOTE

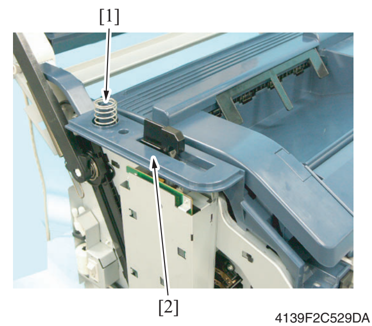
- **After the 2nd transfer roller has been replaced with a new one, reset the maintenance counter of the 2nd transfer roller.**
  See P.112

3.3.7 Fusing unit

NOTE

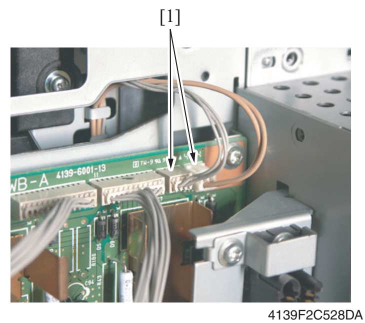
- **Before replacing the fusing unit, ensure that it has had time to cool down.**

1. Remove the rear cover.
   See P.31
2. Remove the left cover.
   See P.32
3. Remove the Auto Document Feeder Unit.
   See P.8 of the Auto Document Feeder Unit service manual.
4. Remove the transfer belt unit.
   See P.17
5. Remove the IR unit.
   See P.50



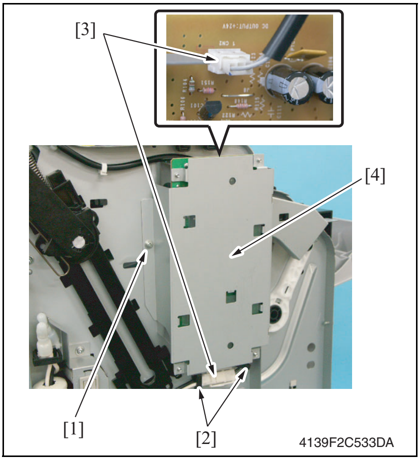
4139F2C529DA

6. Remove the screw [1] and remove the top left cover [2].

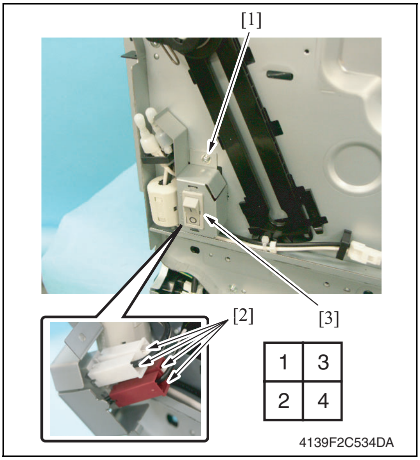


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7. Disconnect two connectors (PJ6, PJ7) [1] from the printer control board.



8. Remove the screw [1].
9. Remove the two saddles [2] and disconnect two connectors [3]. Then, remove the DC power supply 2 protective cover [4].

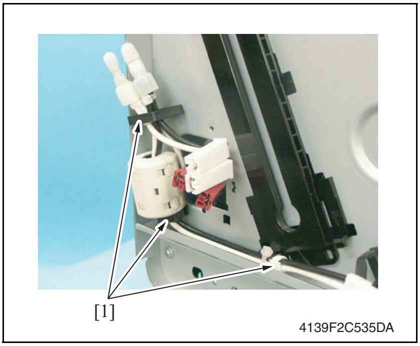


10. Remove the screw [1].
11. Disconnect four connectors [2] and remove the power switch [3].

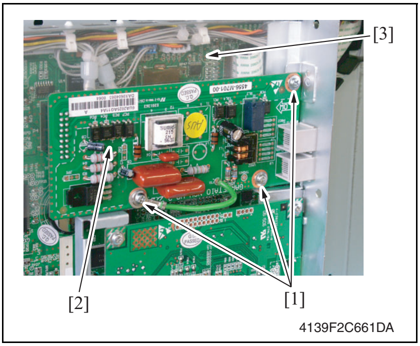
NOTE

- **At reinstallation, make sure of the correct position of each connector.**

	Color of connector	Color of harness
1	White	Black
2	Red	Black
3	White	White
4	Red	White



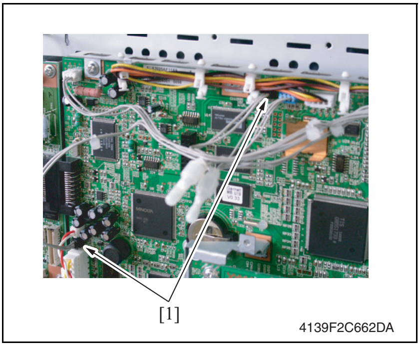
12. Remove three saddles [1] and free the harness.



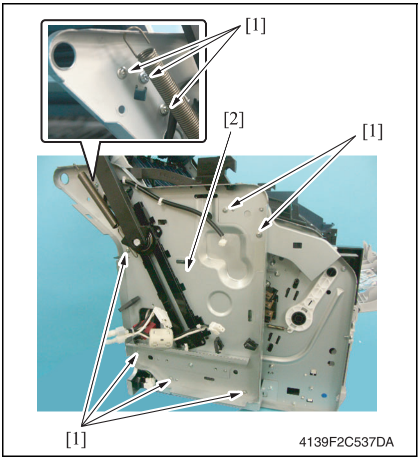
13. Remove three screws [1] and the NCU board [2]. Then, remove the protection film [3].

NOTE

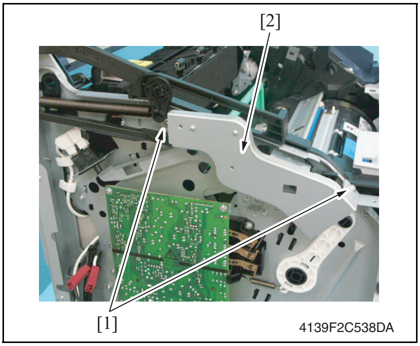
- **Make sure to reinstall the protection film.**



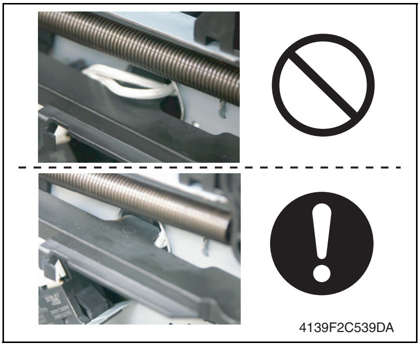
14. Disconnect two connectors (MPJ2, MPJ3) [1] from the image processing board.



15. Remove nine screws [1] and remove the left frame [2].

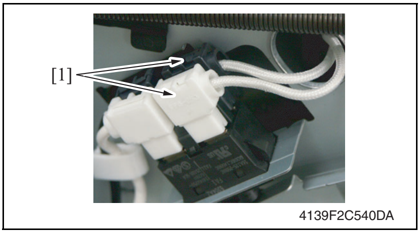


16. Remove two screws [1] and remove the left guide assy [2].

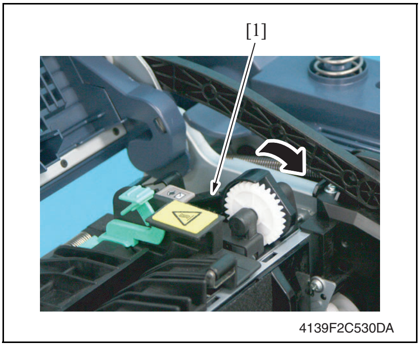


⚠ **CAUTION**

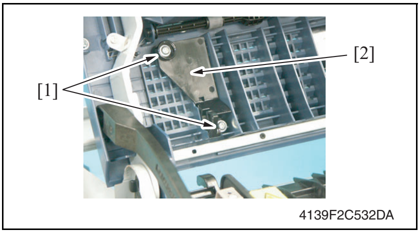
- **When the left guide assy is mounted after the fusing unit has been installed, make sure that the harness of the fusing unit is placed under the left guide assy.**



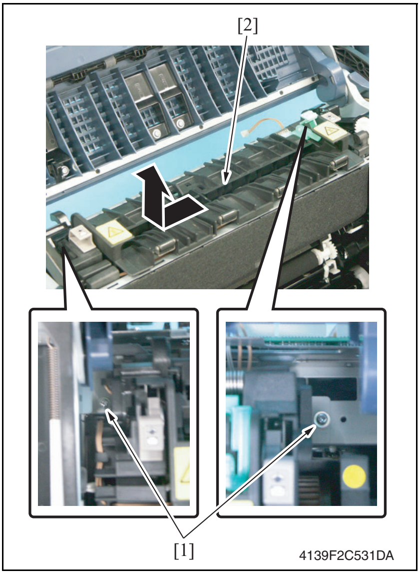
17. Unplug two connectors [1].



18. Swing open the fusing unit gear cover [1].



19. Remove two screws [1] and remove the holder [2].



20. Remove two screws [1] and remove the fusing unit [2].
21. To reinstall, reverse the order of removal.

⚠ **CAUTION**

- **Make sure that the docking gear shaft of the fusing unit fits in the hole of the fusing frame.**
- **When reinstalling the left cover after reinstalling the fusing unit, make sure that the harness of the fusing unit is located below the rib of the left cover.**

  See P.111

4. Firmware upgrade

4.1 Controller firmware upgrading

4.1.1 Preparations for firmware upgrading

NOTE

- **Make sure that the scanner driver has been installed in the PC.**
- **Before updating the firmware, print Configuration Page to confirm the current Controller Firmware Version.**
  See P.116

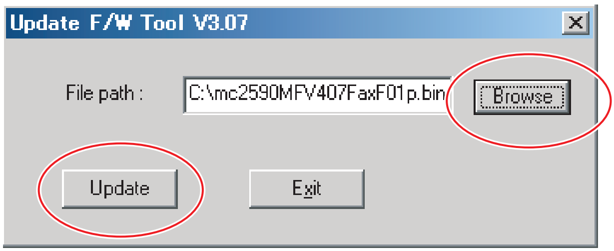
4.1.2 Upgrading procedure

1. Connect the machine and PC using the USB cable.
2. Turn ON the machine's main switch pressing Menu Select key.
3. Confirm that [*BIOS MODE*] appears on the screen.



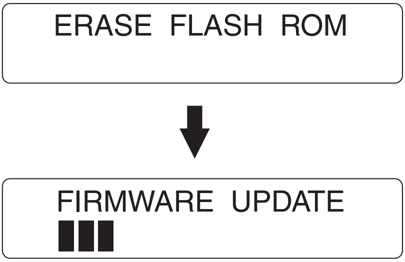
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4. Copy the firmware data and upgrading program in any arbitrary directory of the PC.
5. Double-click “Update.exe”.
6. Click [Browse] and select File path, “mc2590MFVXXXFaxF01p.bin".
7. Click [Update].



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8. Firmware updating starts.



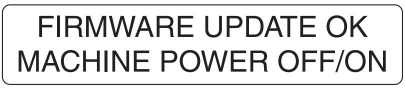
4139F2E654DB

9. When [Transfer Successfully!] message appears on the screen, click [OK] to close the execution tool.



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10. Confirm that [FIRMWARE UPDATE OK] message has been displayed, and turn OFF/ ON the machine's main switch.



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11. Print Configuration Page to confirm the Controller Firmware Version.
See P.116

4.2 NIC firmware upgrading

4.2.1 Preparations for firmware upgrading

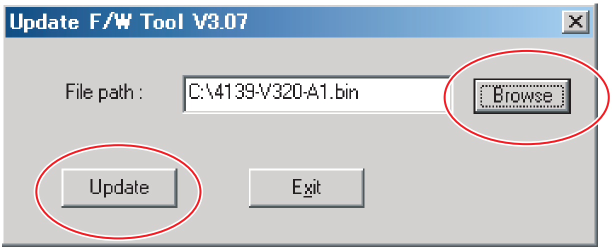
NOTE

- **Make sure that the machine's network is correctly connected to the PC.**
- **Before updating the firmware, print Configuration Page to confirm the current NIC Firmware Version.**

See P.116

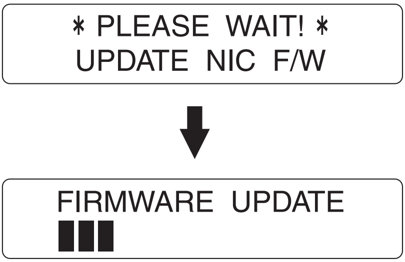
4.2.2 Upgrading procedure

1. Connect the machine and PC using the USB cable.
2. Turn ON the machine's main switch.
3. Copy the firmware data and upgrading program in any arbitrary directory of the PC.
4. Double-click "Update.exe”.
5. Click [Browse] and select File path, “4139-VXXX-A1.bin".
6. Click [Update].



4139F2E681DA

7. Firmware updating starts.



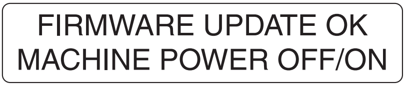
4139F2E678DB

8. When [Transfer Successfully!] message appears on the screen, click [OK] to close the execution tool.



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9. Confirm that [FIRMWARE UPDATE OK] message has been displayed, and turn OFF/ ON the machine's main switch.



4139F2E656DB

10. When firmware updating completes, turn OFF/ON the machine's main switch.
11. Print Configuration Page to confirm the NIC Firmware Version.
See P.116

5. Other

5.1 Disassembly/Adjustment prohibited items

A. Paint-locked screws

NOTE

- **To prevent loose screws, a screw lock in blue or green series color is applied to the screws.**
- **The screw lock is applied to the screws that may get loose due to the vibrations and loads created by the use of machine or due to the vibrations created during transportation.**
- **If the screw lock coated screws are loosened or removed, be sure to apply a screw lock after the screws are tightened.**

B. Red-painted screws

NOTE

- **The screws which are difficult to be adjusted in the field are painted in red in order to prevent them from being removed by mistake.**
- **Do not remove or loosen any of the red-painted screws in the field. It should also be noted that, when two or more screws are used for a single part, only one representative screw may be marked with the red paint.**

C. Variable resistors on board

NOTE

- **Do not turn the variable resistors on boards for which no adjusting instructions are given in Adjustment/Setting.**

D. Removal of PWBs

⚠ CAUTION

- **When removing a circuit board or other electrical component, refer to “Handling of PWBs” and follow the corresponding removal procedures.**
- **The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.**
- **Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.**

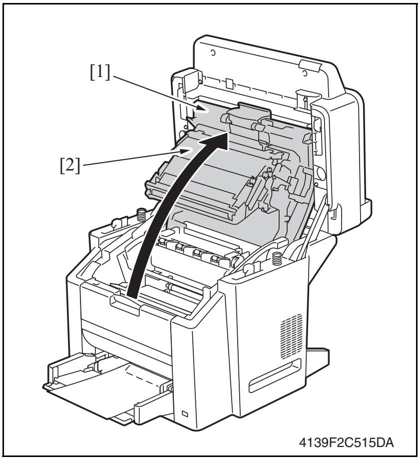
5.2 Disassembly/assembly list (other parts)

No	Section	Part name	Ref.Page
1	Exterior parts	Top cover	P.31
2		Rear cover	P.31
3		Left cover	P.32
4		Right cover	P.32
5		Paper feed cover	P.33
6		Front cover	P.33
7		Original glass unit	P.34
8	Boards and etc.	Operation board	P.35
9		Operation key board	P.37
10		USB board	P.38
11		Image processing board	P.39
12		Printer control board	P.41
13		DC power supply1	P.42
14		DC power supply2	P.44
15		High voltage unit	P.44
16		Waste toner near full detect board/LED	P.46
17		NCU board	P.47
18		LAN board	P.48
19	Units	Scanner unit	P.49
20		IR unit	P.50
21		PH unit	P.53
22		Paper feed unit	P.58
23	Other parts	Main motor	P.59
24		Power supply cooling fan motor	P.60
25		Ventilation fan motor	P.63
26		Fusing motor	P.65
27		Developing motor	P.66
28		Rack motor	P.67
29		Scanner motor	P.68
30		IR cooling fan motor	P.69
31		Tray1 paper pick-up solenoid	P.70
32		Registration roller solenoid	P.70
33		Pressure/retraction solenoid /cleaning blade	P.71
34		Pressure/retraction solenoid /2nd image transfer	P.73
35		Temperature/humidity sensor	P.74
36		IDC sensor	P.75
37		Torque limiter	P.75
38		Inlet assy	P.77
39		Speaker	P.80

5.3 Disassembly/Assembly procedure

5.3.1 Top cover

1. Open the IR unit.



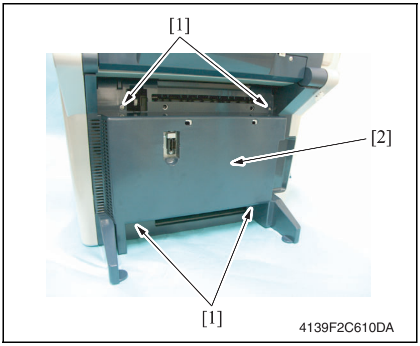
2. Pull the lever and swing open the upper cover [1].

NOTE

- **Use care not to touch the transfer belt [2].**

5.3.2 Rear cover

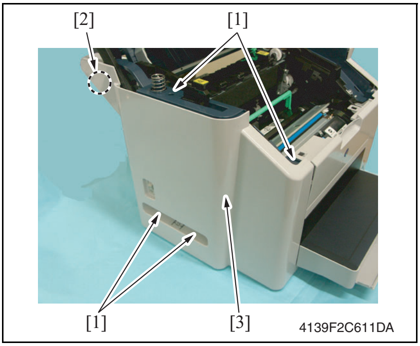
1. Open the IR unit.
2. Disconnect the ADF hookup connector.



3. Remove four screws [1] and the rear cover [2].

5.3.3 Left cover

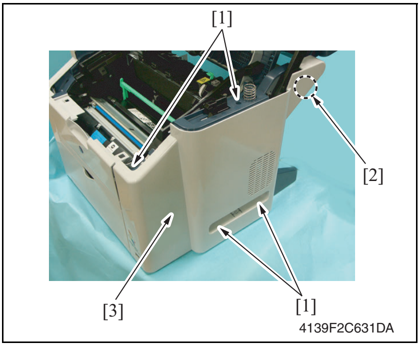
1. Open the IR unit.
2. Remove the rear cover.
   See P.31
3. Open the top cover.
   See P.31



4. Remove four screws [1].
5. Remove the tab [2] and the left cover [3].

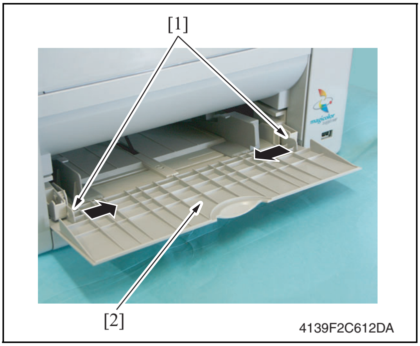
5.3.4 Right cover

1. Open the IR unit.
2. Remove the rear cover.
   See P.31
3. Open the top cover.
   See P.31



4. Remove four screws [1].
5. Remove the tab [2] and the right cover [3].

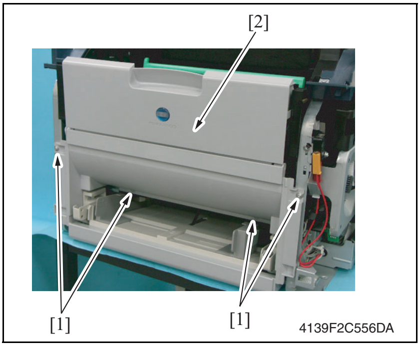
5.3.5 Paper feed cover



1. Open the paper feed cover [2].
2. Push in the right and left holders [1] and remove the paper feed cover [2].

5.3.6 Front cover

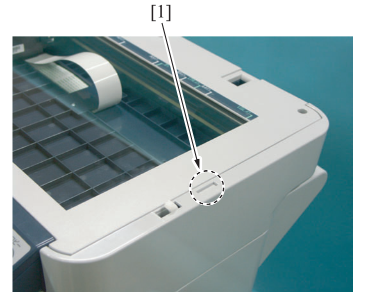
1. Open the IR unit.
2. Open the top cover.
See P.31
3. Remove the right cover.
See P.32
4. Remove the left cover.
See P.32
5. Remove the paper feed cover.
See P.33



6. Remove four screws [1] and the front cover [2].

NOTE
- **When removing and reinstalling the front cover, use care not to touch the developing roller of the toner cartridge.**

5.3.7 Original glass unit

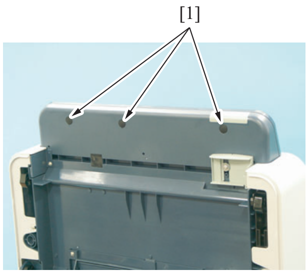


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1. Remove the Auto Document Feeder Unit.
   See P.8 of the Auto Document Feeder Unit service manual.
2. Open the IR unit.

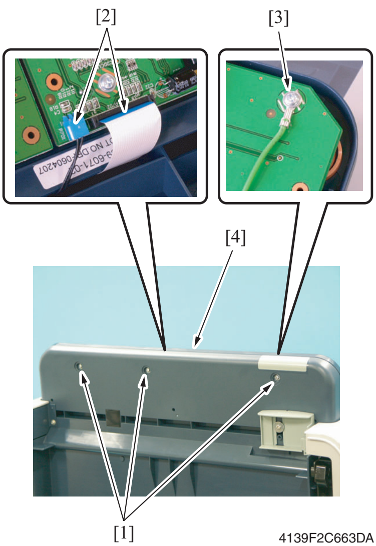
NOTE

- **If the IR unit is to be opened with the Auto Document Feeder Unit removed, do that while pushing the portion [1].**



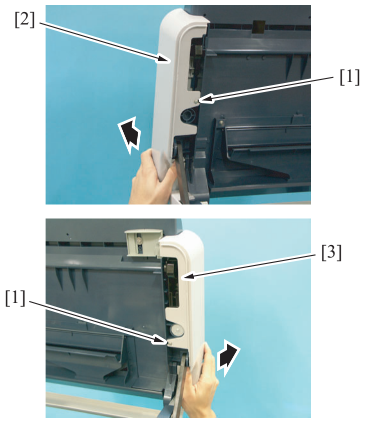
4139F2C613DA

3. Remove the three caps [1].



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4. Remove three screws [1].
5. Disconnect two connectors [2] and remove the ground wire [3]. Then, remove the control panel [4].

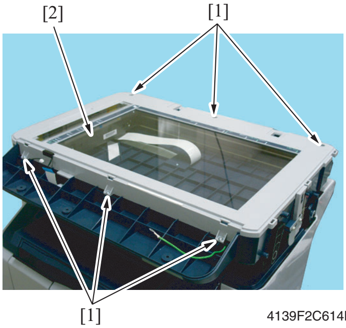


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6. Open the IR unit.
7. Remove two screws [1], IR unit left cover [2], and IR unit right cover [3].

NOTE

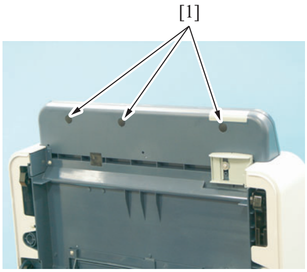
- **To unhook the tab, insert your finger into the hole below the hinge and try to push the cover outward.**



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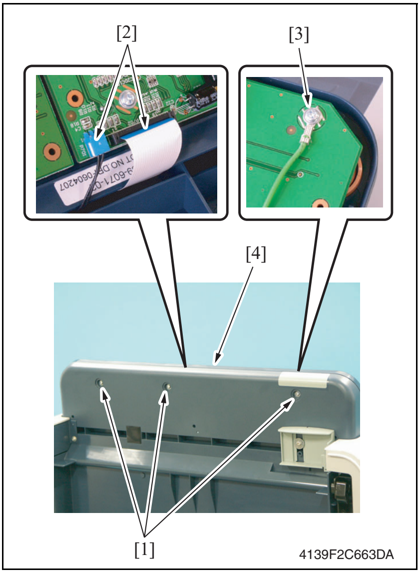
8. Remove six screws [1] and the original glass unit [2].

5.3.8 Operation board (OPB)

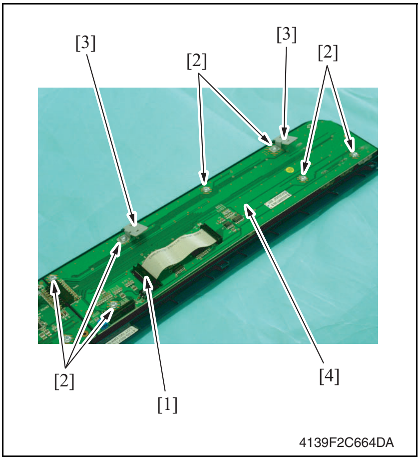


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1. Open the IR unit.
2. Remove the three caps [1].

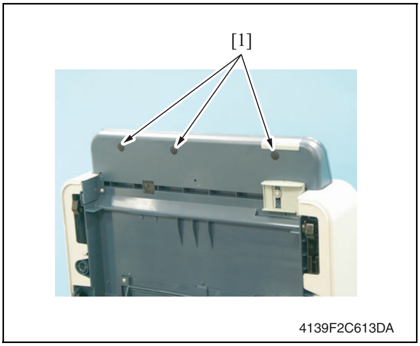


3. Remove three screws [1].
4. Disconnect two connectors [2] and remove the ground wire [3]. Then, remove the control panel [4].

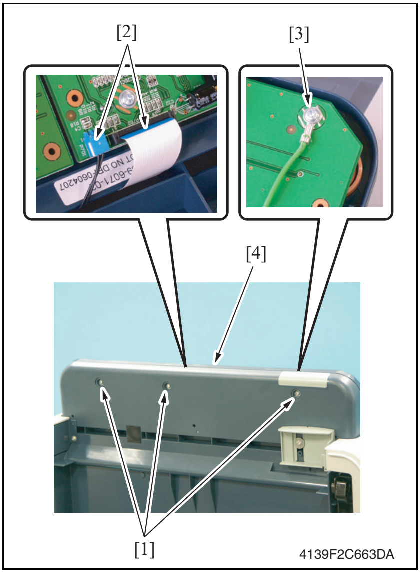


5. Disconnect the connector [1].
6. Remove seven screws [2], two brackets [3], and the operation board [4].

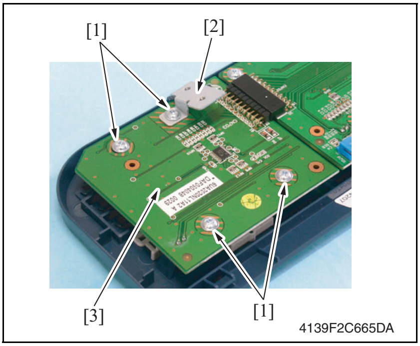
5.3.9 Operation key board (OKB)



1. Open the IR unit.
2. Remove the three caps [1].



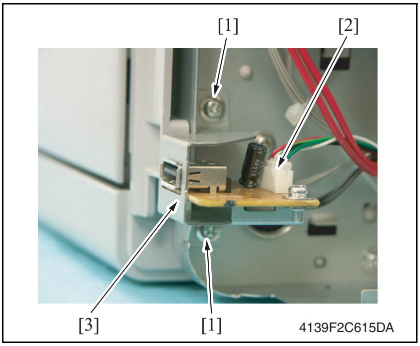
3. Remove three screws [1].
4. Disconnect two connectors [2] and remove the ground wire [3]. Then, remove the control panel [4].



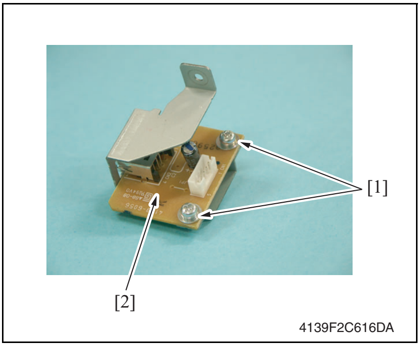
5. Remove four screws [1], the bracket [2], and the operation key board [3].

5.3.10 USB board (USB)

1. Remove the right cover.
   See P.32



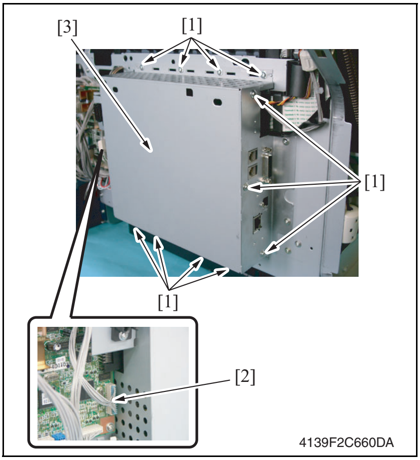
2. Remove two screws [1] and disconnect the connector [2]. Then, remove the USB board assy [3].



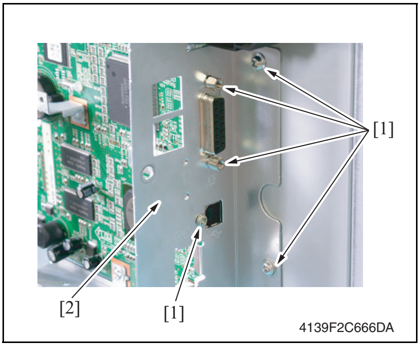
3. Remove two screws [1] and the USB board [2].

5.3.11 Image processing board (IPB)

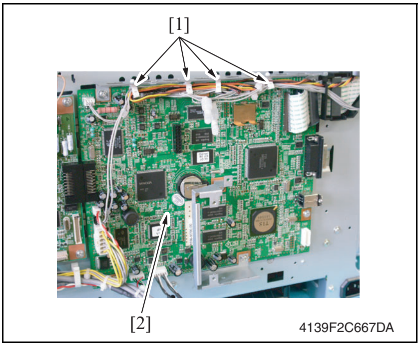
1. Remove the rear cover.
   See P.31
2. Remove the left cover.
   See P.32



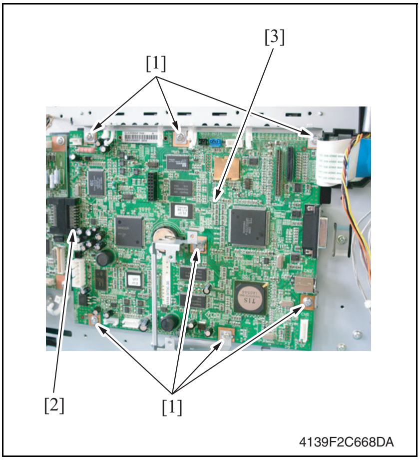
3. Remove eleven screws [1] and disconnect the connector [2]. Then, remove the image processing board protective cover [3].
4. Remove the NCU board.
   See P.47
5. Remove the LAN board.
   See P.48



6. Remove five screws [1] and remove the interface metal plate [2].



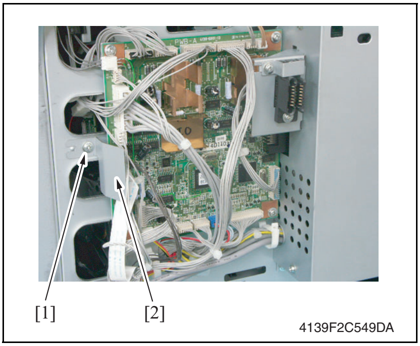
7. Remove four wire saddle [1] and disconnect all connectors from the image processing board [2].



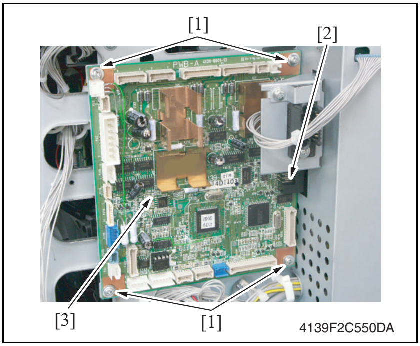
8. Remove seven screws [1].
9. Disconnect the connector [2] from the printer control board and remove the image processing board [3].

5.3.12 Printer control board (PRCB)

1. Remove the rear cover.
   See P.31



2. Remove the screw [1] and the connector protective bracket [2].
3. Disconnect all connectors and flat cables from the printer control board.

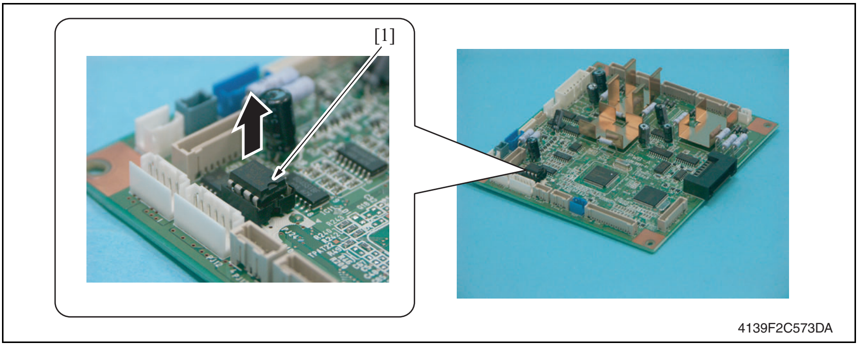


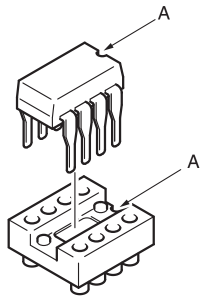
4. Remove four screws [1].
5. Disconnect the connector [2] from the image processing board and remove the printer control board [3].

6. Remove parameter chip (PJ24) [1] from the printer control board.

NOTE

- **When the printer control board (PRCB) has been replaced, be sure to remount parameter chip (PJ24). Remove parameter chip (PJ24) from the old printer control board and mount it on the new printer control board.**



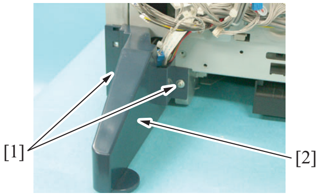


4138fs2544c0

NOTE
- **When mounting parameter chip (PJ24), align the notches (indicated by "A" in the illustration).**

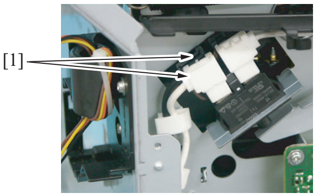
5.3.13 DC power supply 1 (DCPU1)

1. Remove the printer control board.
See P.41
2. Remove the image processing board.
See P.39



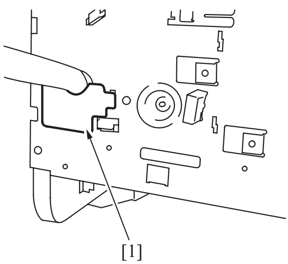
4139F2C553DA

3. Remove two screws [1] and the fixing base [2].



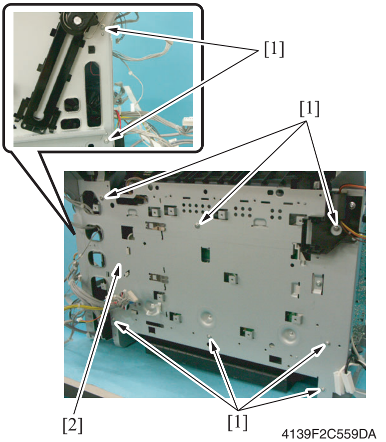
4139F2C555DA

4. Disconnect two connectors [1].



4139F2C558DA

5. Remove the harness protective seal [1].

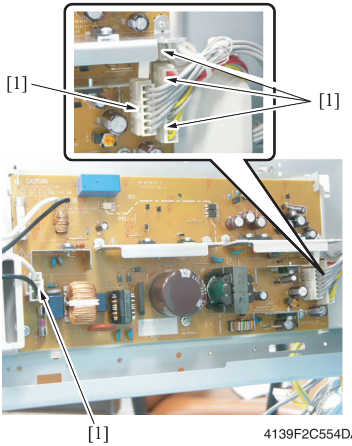


4139F2C559DA

6. Remove nine screws [1] and pull the DC power supply1 assy [2] toward you.

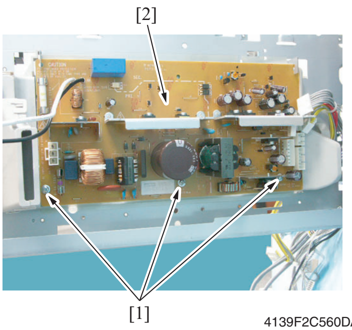
NOTE

- **Do not pull the power unit assy hard, as a number of harnesses are connected to it.**



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7. Disconnect five connectors [1] from the DC power supply1.

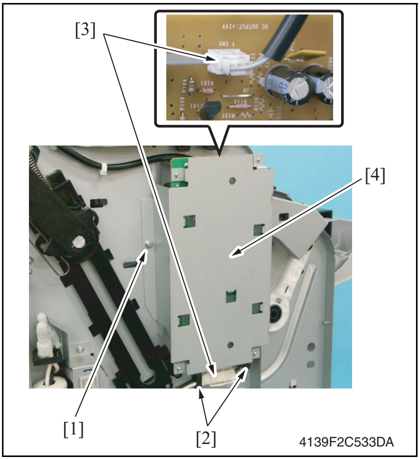


4139F2C560DA

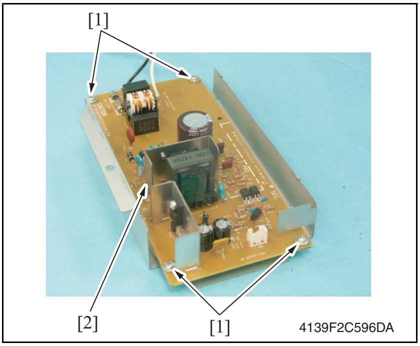
8. Remove three screws [1] and the DC power supply 1 [2].

5.3.14 DC power supply 2 (DCPU2)

1. Remove the left cover.
See P.32



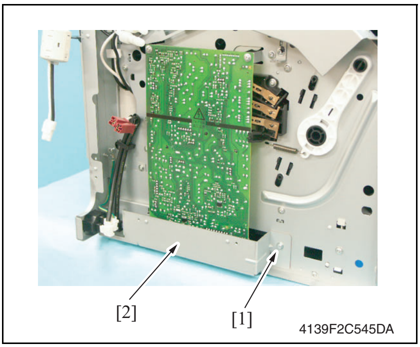
2. Remove the screw [1].
3. Remove two saddles [2] and disconnect two connectors [3]. Then, remove the DC power supply 2 assy [4].



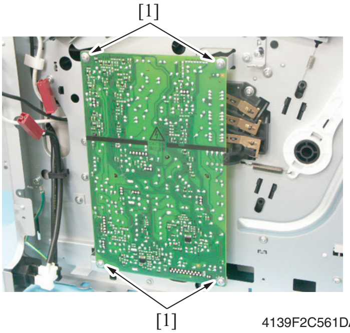
4. Remove four screws [1] and the DC power supply 2 [2].

5.3.15 High voltage unit (HV)

1. Remove the DC power supply 2.
See P.44

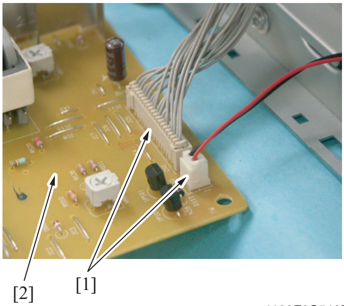


2. Remove the screw [1] and the bracket [2].



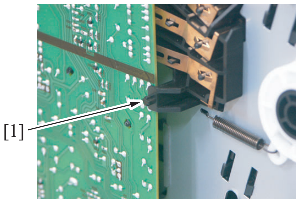
4139F2C561DA

3. Remove four screws [1].



4139F2C546DA

4. Disconnect two connectors [1] and remove the high voltage unit [2].



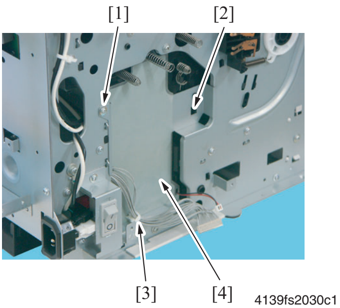
4139F2C547DA

Precautions for reinstallation of the high voltage unit

- **Make sure that the high voltage unit fits into the tab [1] at the location shown on the left.**
- **During the reinstallation procedure, make sure that the high voltage terminal is not deformed or left loose.**

5.3.16 Waste toner near full detect board/LED (WTDTB/LED)

1. Remove the high voltage unit.
   See P.44

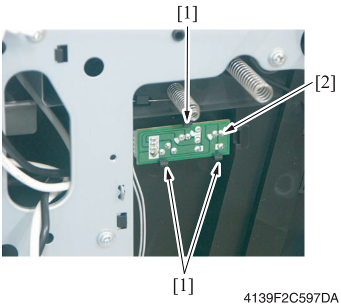


4139fs2030c1

2. Remove the screw [1], unhook the tab [2], and remove the wiring saddle [3]. Then, remove the shield [4].

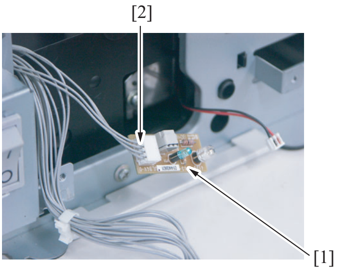
NOTE

- **When reinstalling the shield, use care not to allow the harness to be wedged in it.**



4139F2C597DA

3. Remove three tabs [1] and the waste toner near full detect board/LED [2].

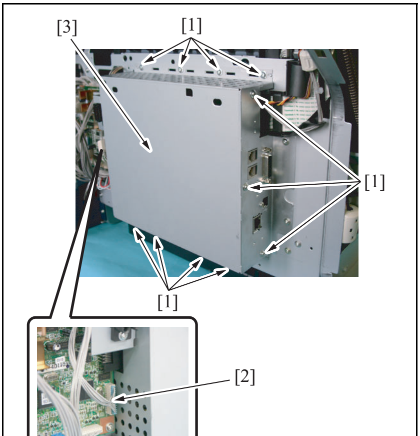


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4. Disconnect the connector [2] of the waste toner near full detect board/ LED [1].

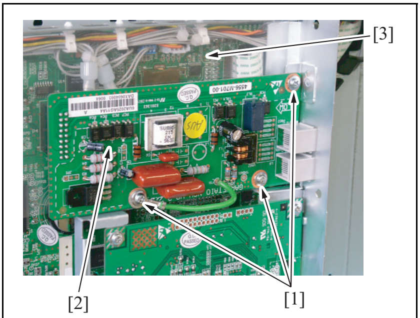
5.3.17 NCU board

1. Remove the rear cover.
   See P.31
2. Remove the left cover.
   See P.32



4139F2C660DA

3. Remove eleven screws [1] and disconnect the connector [2]. Then, remove the image processing board protective cover [3].



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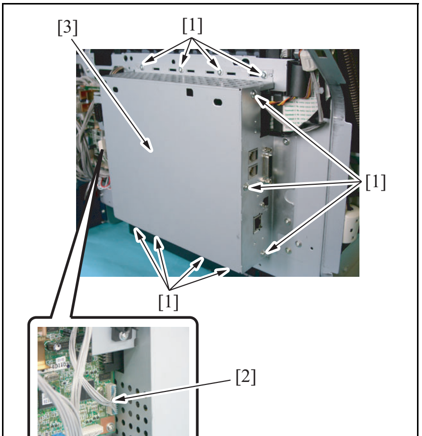
4. Remove three screws [1] and the NCU board [2]. Then, remove the protection film [3].

NOTE

- **Make sure to reinstall the protection film.**

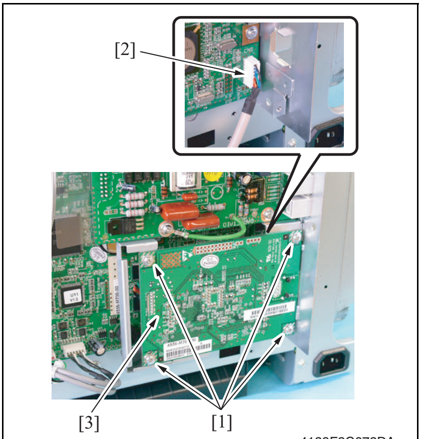
5.3.18 LAN board

1. Remove the rear cover.
   See P.31
2. Remove the left cover.
   See P.32



4139F2C660DA

3. Remove eleven screws [1] and disconnect the connector [2]. Then, remove the image processing board protective cover [3].

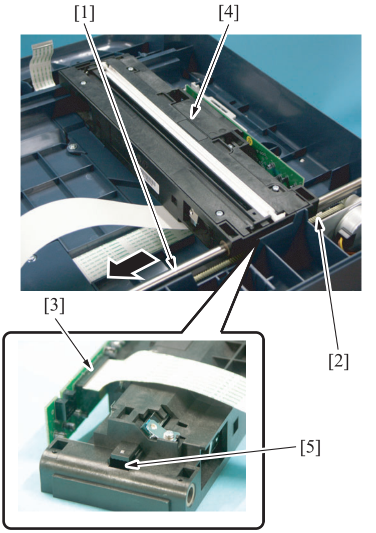


4139F2C672DA

4. Remove four screws [1] and disconnect the connector (CN5) [2]. Then, remove the LAN board [3].

5.3.19 Scanner unit

1. Remove the original glass unit.
   See P.34



4139F2C625DA

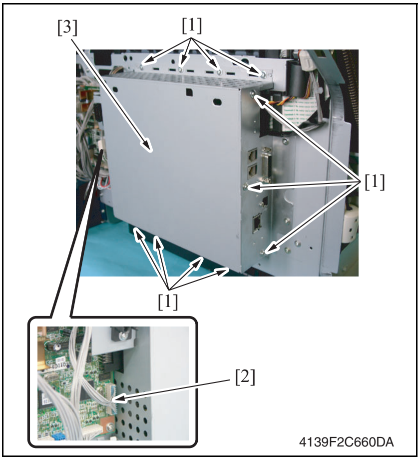
2. Remove the shaft [1] and belt [2].
3. Disconnect the flat cable [3], and remove the scanner unit [4].

NOTE

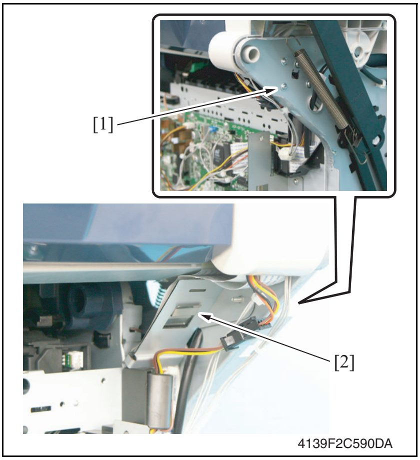
- **When reinstalling the scanner unit, pass the belt through portion [5].**

5.3.20 IR unit

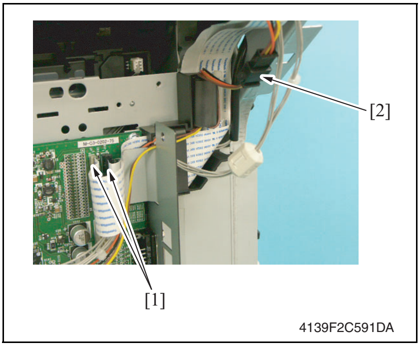
1. Remove the Auto Document Feeder Unit.
   See P.8 of the Auto Document Feeder Unit service manual.
2. Remove the rear cover.
   See P.31
3. Remove the right cover.
   See P.32
4. Remove the left cover.
   See P.32



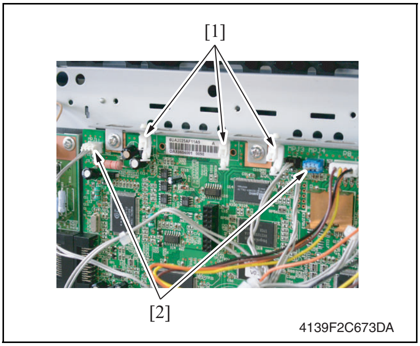
5. Remove eleven screws [1], disconnect the connector [2], and remove the image processing board protective cover [3].



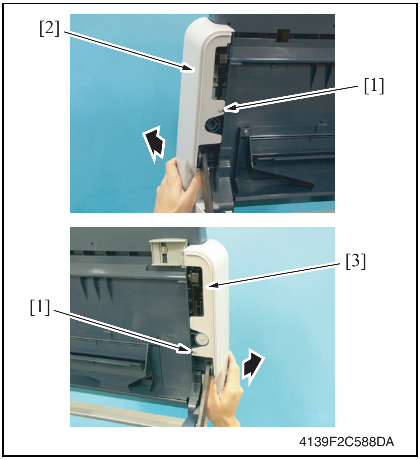
6. Remove the screw [1] and harness holding bracket [2].



7. Disconnect two flat cables [1] and the connector [2] from the image processing board.



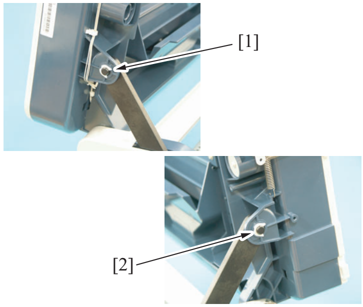
8. Remove three wire saddle [1].
9. Disconnect two connectors (MPJ1 and MPJ4) [2] from the image processing board.



10. Open the IR unit.
11. Remove two screws [1], IR unit left cover [2], and IR unit right cover [3].

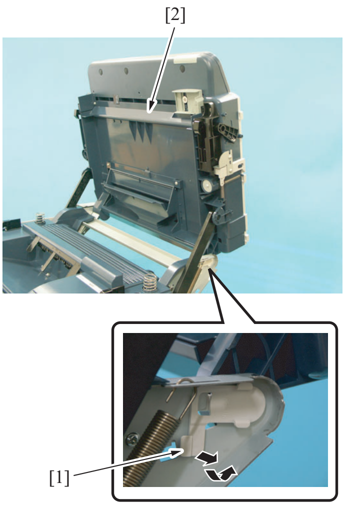
NOTE

- **To unhook the tab, insert your finger into the hole below the hinge and try to push the cover outward.**



4139F2C587DA

12. Remove the left hinge C-clip [1] and right hinge C-clip [2] of the IR unit.



4139F2C617DA

13. Remove the stopper [1] and the IR unit [2].

5.3.21 PH unit



CAUTION

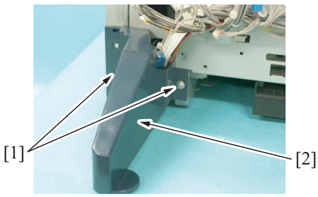


- **Do not replace the PH unit while the machine is turned ON. The laser beam that may be emitted can blind you.**



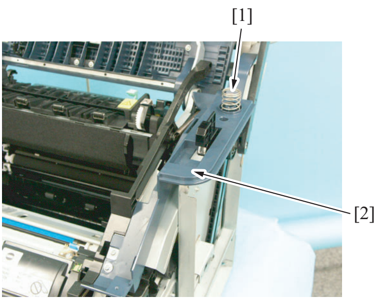
- **Do not attempt to disassemble or adjust the PH unit. The laser beam that may be emitted can blind you.**

1. Remove the rear cover.
   See P.31
2. Remove the right cover.
   See P.32
3. Remove the left cover.
   See P.32
4. Remove the front cover.
   See P.33
5. Remove the IR unit.
   See P.50



4139F2C553DA

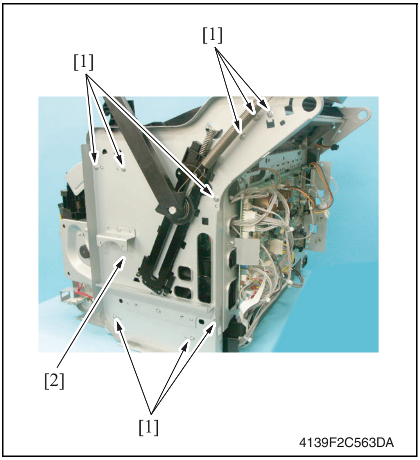
6. Remove two screws [1] and the fixing base [2].



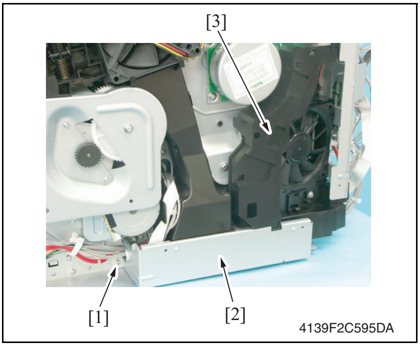
4139F2C562DA

7. Remove the screw [1] and the top right cover [2].

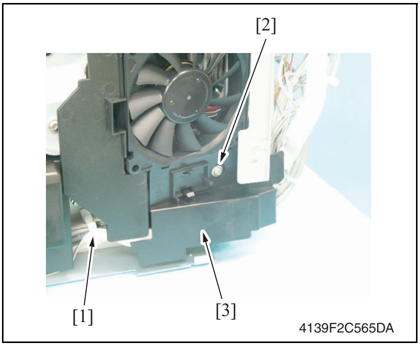
8. Remove the speaker.
   See P.80



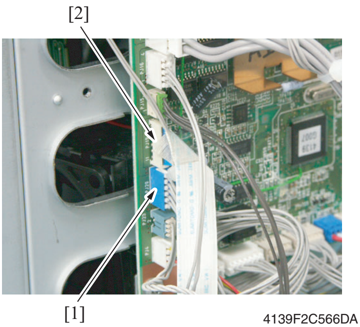
9. Remove nine screws [1] and the right frame [2].



10. Remove the screw [1], bracket [2], and the guide [3].

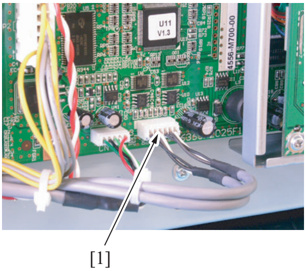


11. Remove the wiring saddle [1].
12. Remove the screw [2] and the harness cover [3].



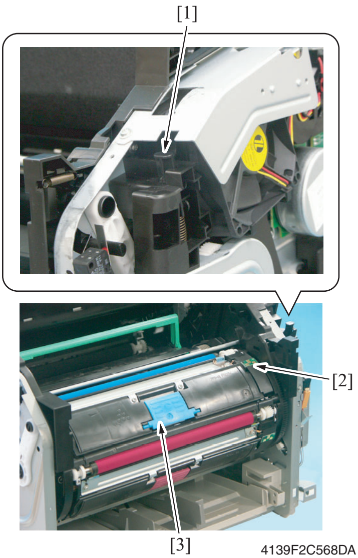
4139F2C566DA

13. Disconnect the connector (PJ20) [1] and the flat cable (PJ19) [2] from the printer control board.



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14. Disconnect the connector (P3) [1] from the image processing board.

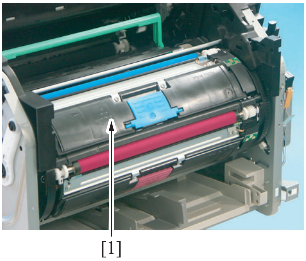


4139F2C568DA

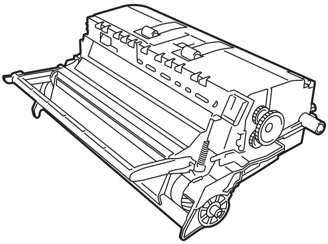
15. Press the rack release lever [1] and then rotate the rack [2] so that the toner cartridge [3] is moved to a position, at which the toner cartridge can be easily removed.

NOTE

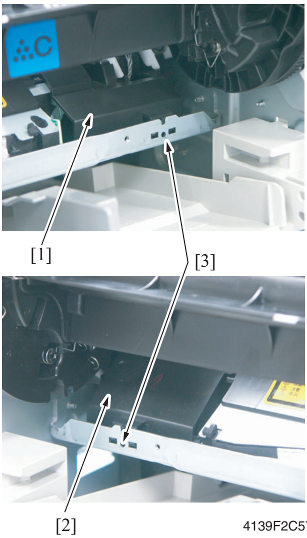
- **When rotating the rack, use care not to touch the developing roller.**



16. Hold onto the handle, pull it and remove the toner cartridge [1].
17. Repeat steps 14 and 15 to remove all toner cartridges.
18. Remove the drum cartridge.
    See P.16

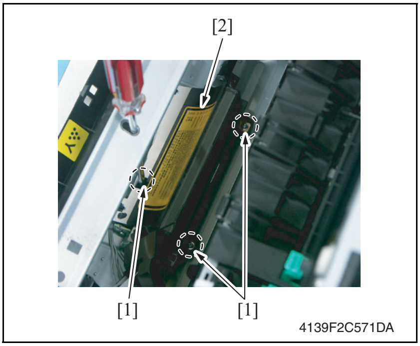


NOTE
- **Position the removed drum cartridge as shown in the illustration at the left.**
- **Be sure to keep the drum cartridge horizontal and place it where it will not become dirty.**
- **Do not leave the drum cartridge removed for more than 15 minutes, and do not place the removed drum cartridge in a location where it will be exposed to direct light (such as sunlight).**

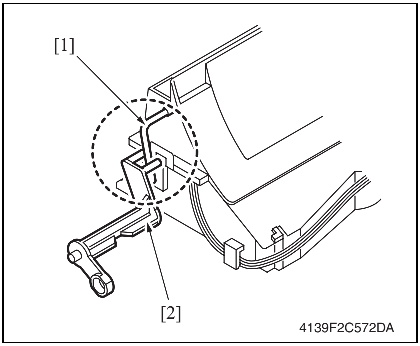


19. Remove the PH unit cover/right [1], left [2].

NOTE
- **Through the hole [3] at the location shown on the left, push the tab of the PH unit cover and remove the PH unit cover.**
- **Note the connector connected to the PH unit cover/right. Use care not to pull the unit with an excessive force, so you don't break the wire.**



20. Press the rack release lever and turn the rack so that the screw on the PH unit can be accessed through the hole in the machine frame.
21. Remove three screws [1] and the PH unit [2].

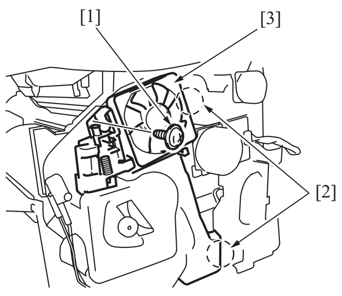


Precautions for reinstallation of the PH unit

- **When reinstalling the PH unit, make sure that you insert the lever [1] of the PH shutter into the lever of the machine [2].**

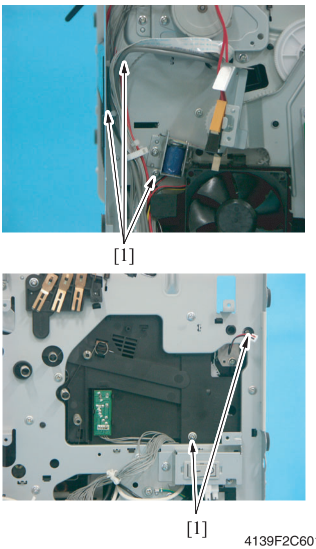
5.3.22 Paper feed unit

1. Remove the rear cover.
   See P.31
2. Remove the right cover.
   See P.32
3. Remove the left cover.
   See P.32
4. Remove the high voltage unit and shield.
   See steps 1 to 2 of the removal procedure for "Tray1 paper pick-up solenoid (SD1)" on P.70.
5. remove the Rack Drive Assy.
   See steps 1 through 3 of the removal procedure for "Developing motor (M3)" on P.66.
6. Remove the ventilation fan motor.
   See P.63



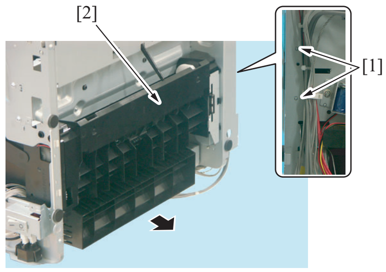
4139F2C600DA

7. Remove one screw [1], unlock two tabs [2] and remove the ventilation fan duct [3].



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8. Lay the main body of the printer on its back.
9. Remove five screws [1].

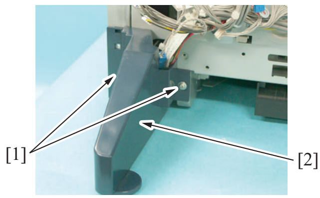


4139F2C602DA

10. Unhook two dowels [1] and remove the paper feed unit [2].

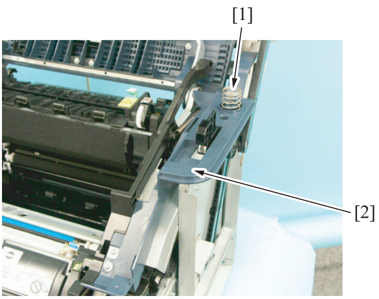
5.3.23 Main motor (M1)

1. Remove the IR unit.
See P.50



4139F2C553DA

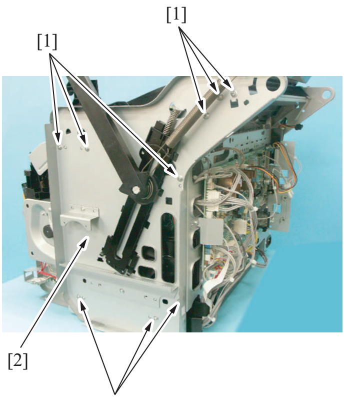
2. Remove two screws [1] and the fixing base [2].



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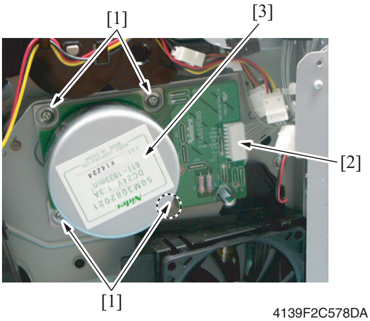
3. Remove the screw [1] and the top right cover [2].

4. Remove the speaker.
See P.80



4139F2C563DA

5. Remove nine screws [1] and the right frame [2].

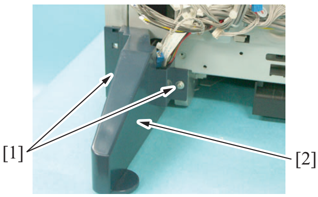


4139F2C578DA

6. Remove four screws [1], disconnect the connector [2], and remove the main motor [3].

5.3.24 Power supply cooling fan motor (FM1)

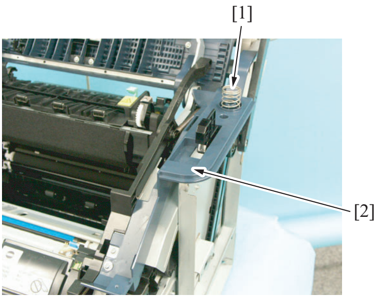
1. Remove the IR unit.
See P.50



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2. Remove two screws [1] and the fixing base [2].

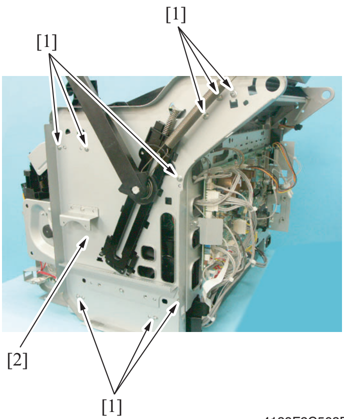
3. Remove the screw [1] and the top right cover [2].



4139F2C562DA

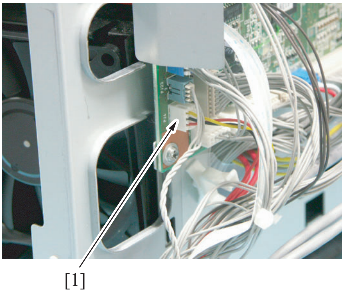
4. Remove the speaker.
See P.80

5. Remove nine screws [1] and the right frame [2].

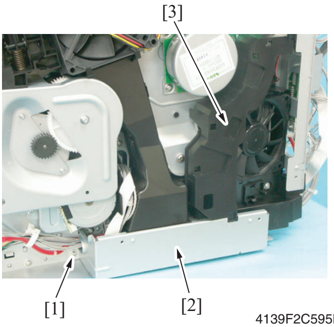


4139F2C563DA

6. Disconnect the connector (PJ4) [1] from the printer control board.

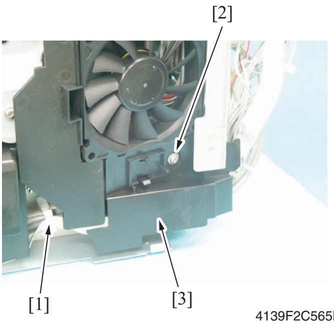


4139F2C579DA



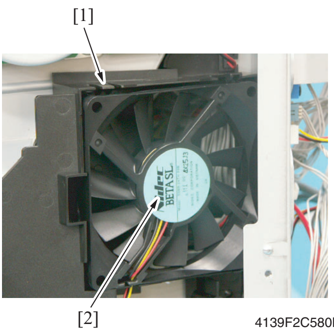
4139F2C595DA

7. Remove the screw [1], bracket [2], and guide [3].



4139F2C565DA

8. Remove the wiring saddle [1].
9. Remove the screw [2] and the harness cover [3].

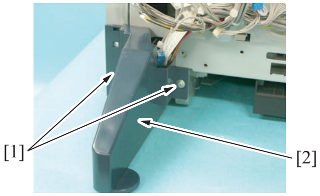


4139F2C580DA

10. Remove the tab [1] and the power supply cooling fan motor [2].

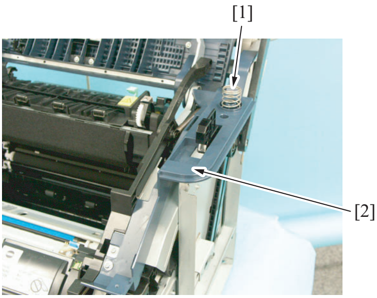
5.3.25 Ventilation fan motor (FM2)

1. Remove the IR unit.
See P.50



4139F2C553DA

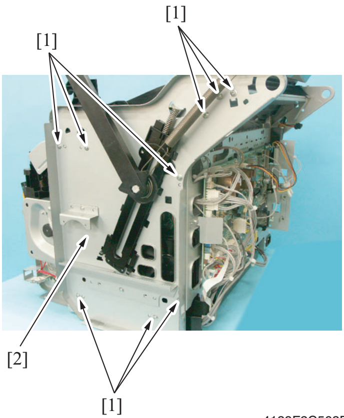
2. Remove two screws [1] and the fixing base [2].



4139F2C562DA

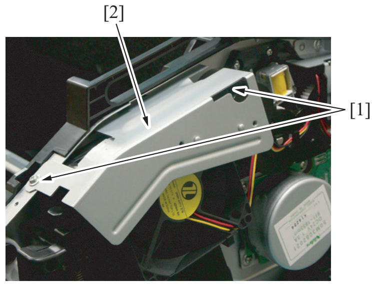
3. Remove the screw [1] and the top right cover [2].

4. Remove the speaker.
See P.80



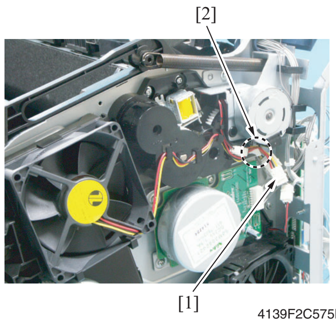
4139F2C563DA

5. Remove nine screws [1] and the right frame [2].



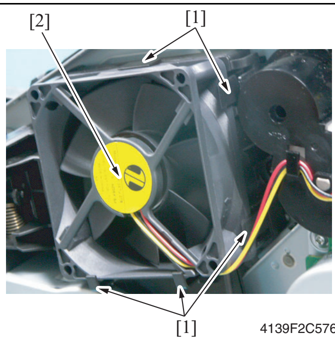
4139F2C574DA

6. Remove two screws [1] and the bracket [2].



4139F2C575DA

7. Disconnect the connector [1] of the ventilation fan motor and remove the harness from the wiring saddle [2].

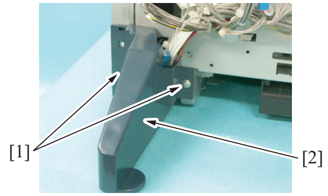


4139F2C576DA

8. Remove five tabs [1] and the ventilation fan motor [2].

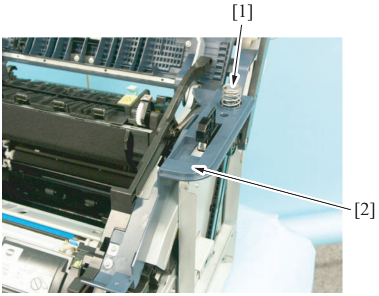
5.3.26 Fusing motor (M4)

1. Remove the IR unit.
See P.50



4139F2C553DA

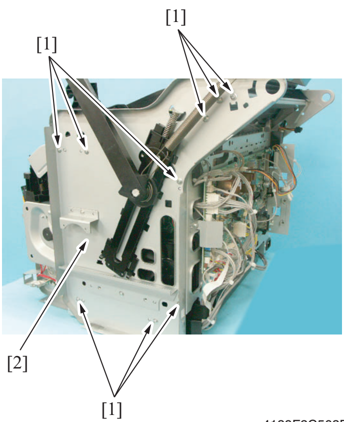
2. Remove two screws [1] and the fixing base [2].



4139F2C562DA

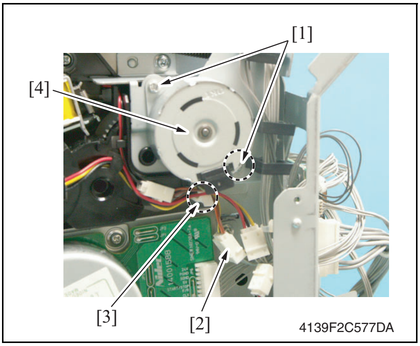
3. Remove the screw [1] and the top right cover [2].

4. Remove the speaker.
See P.80



4139F2C563DA

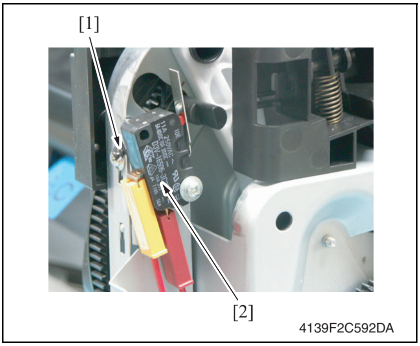
5. Remove nine screws [1] and the right frame [2].



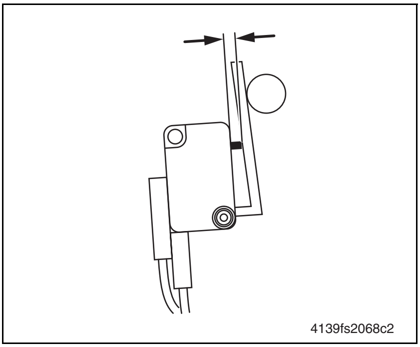
6. Remove two screws [1] and disconnect the connector [2].
7. Remove the harness from the wiring saddle [3] and remove the fusing motor [4].

5.3.27 Developing motor (M3)

1. Open the top cover.
   See P.31
2. Remove the right cover.
   See P.32
3. Remove the front cover.
   See P.33

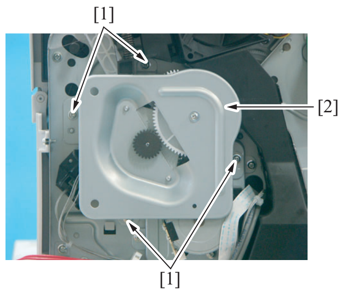


4. Remove the screw [1] and the safety switch [2].



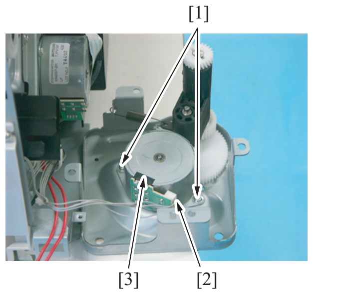
Precautions for reinstallation of the safety switch assy

- **Check that the switch is actuated with the front cover and the upper cover closed.**
- **Make sure that the distance between the switch lever and switch case (with the switch in the actuated position) falls within the specified range.**
  Specifications: 0.1 to 1.0 mm



4139F2C593DA

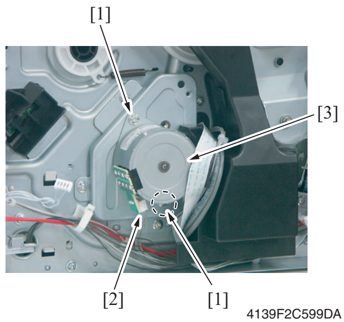
5. Remove four screws [1] and the rack drive assy [2].



4139F2C594DA

6. Remove two screws [1], disconnect the connector [2], and remove the developing motor [3].

5.3.28 Rack motor (M2)

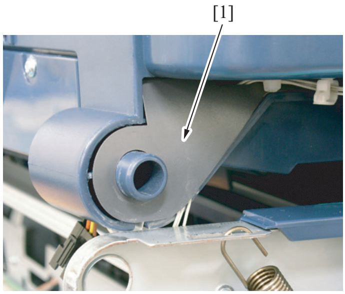


4139F2C599DA

1. Remove the rack drive assy.
   See steps 1 through 5 of the removal procedure for “Developing motor (M3)” on P.66.
2. Remove two screws [1], disconnect the connector [2], and remove the developing motor [3].

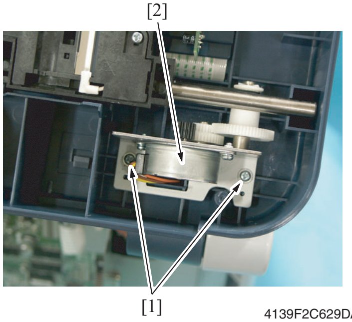
5.3.29 Scanner motor (M5)

1. Remove the IR unit.
   See P.50
2. Remove the original glass unit.
   See P.34



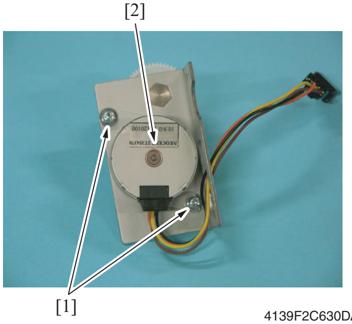
4139F2C632DA

3. Peel off the mylar [1].



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4. Remove two screws [1] and the scanner motor assy [2].

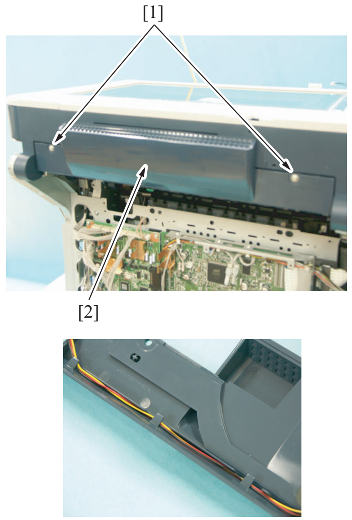


4139F2C630DA

5. Remove two screws [1] and the scanner motor [2].

5.3.30 IR cooling fan motor (FM3)

1. Remove the rear cover.
See P.31

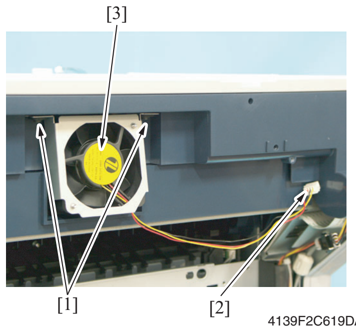


4139F2C618DA

2. Remove two screws [1] and the IR cooling fan motor cover [2].

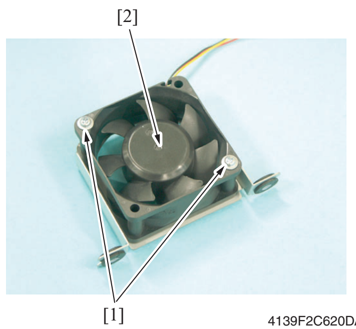
NOTE

- **When reinstalling the IR cooling fan motor assy, pass the harness through the guide.**



4139F2C619DA

3. Remove two screws [1] and disconnect the connector [2]. Then, remove the IR cooling fan motor assy [3].

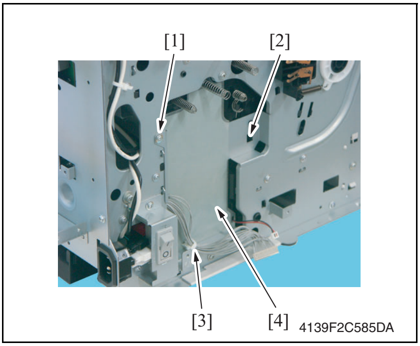


4139F2C620DA

4. Remove two screws [1] and the IR cooling fan motor [2].

5.3.31 Tray1 paper pick-up solenoid (SD1)

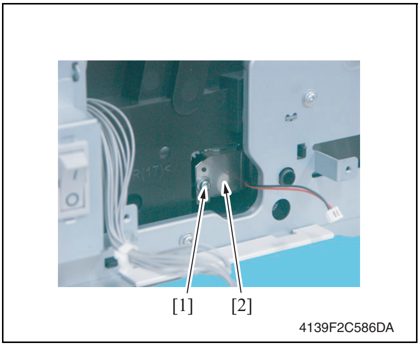
1. Remove the high voltage unit.
See P.44



2. Remove the screw [1], unlock the tab [2], and remove the wiring saddle [3]. Then, remove the shield [4].

⚠ **CAUTION**

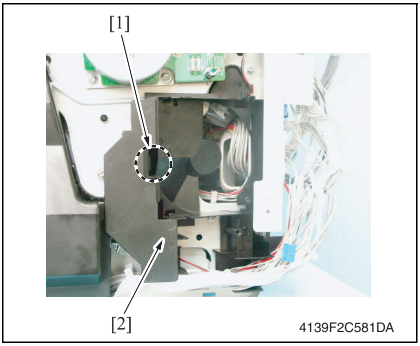
- **When reinstalling the shield, make sure that no part of the harness is wedged in the mechanism.**



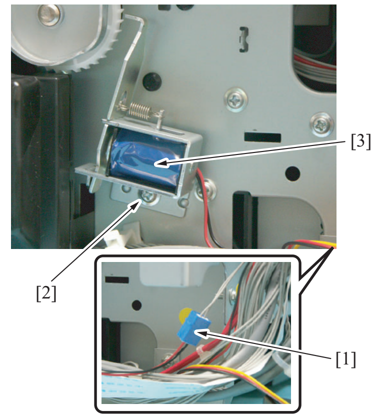
3. Remove the screw [1] and the tray1 paper pick-up solenoid [2].

5.3.32 Registration roller solenoid (SD2)

1. Remove the power supply cooling fan motor.
See P.60

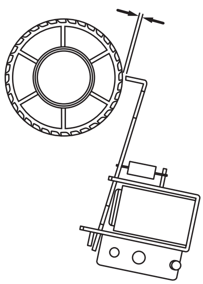


2. Remove the tab [1] and the guide [2].



4139F2C582DA

3. Disconnect the connector [1] and remove the screw [2]. Then, remove the registration roller solenoid [3].

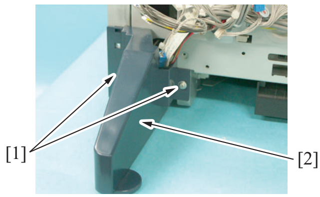

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Precaution for reinstallation

- **Reinstall the solenoid so that the clearance between the gear of the registration roller clutch and flapper falls within the specified range. Specifications: 1.0 ± 0.2 mm**

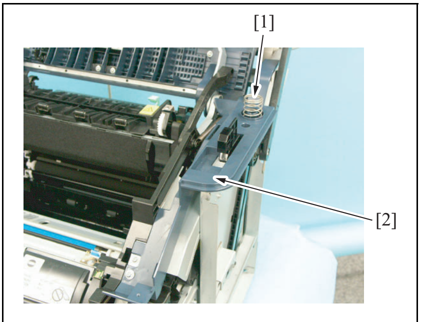
5.3.33 Pressure/retraction solenoid /cleaning blade (SD3)

1. Remove the IR unit.
See P.50



4139F2C553DA

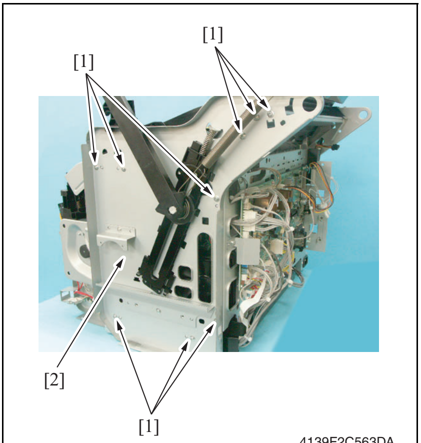
2. Remove two screws [1] and the fixing base [2].



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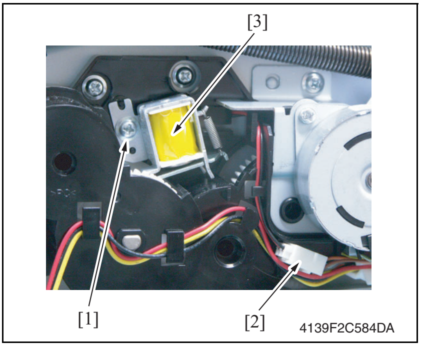
3. Remove the screw [1] and the top right cover [2].

4. Remove the speaker.
See P.80



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5. Remove nine screws [1] and the right frame [2].

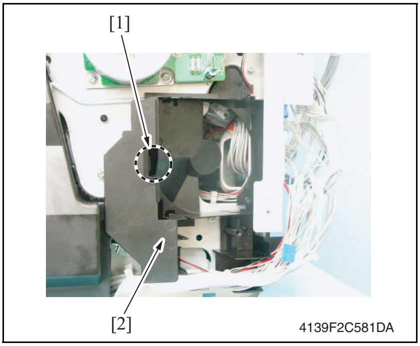


4139F2C584DA

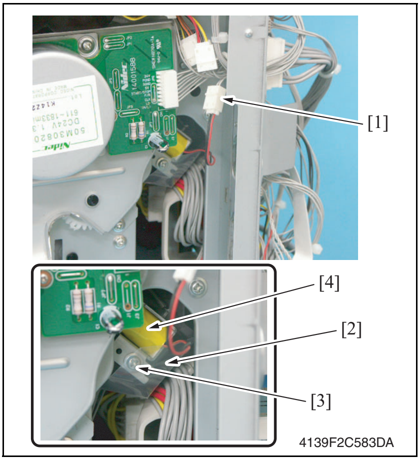
6. Remove the screw [1] and disconnect the connector [2]. Then, remove the pressure/retraction solenoid/ cleaning blade [3].

5.3.34 Pressure/retraction solenoid /2nd image transfer (SD4)

1. Remove the power supply cooling fan motor.
   See P.60



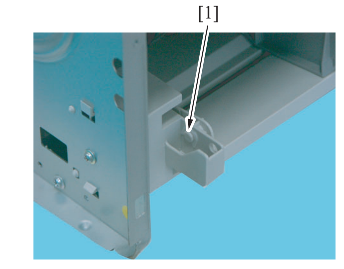
2. Remove the tab [1] and the guide [2].



3. Disconnect the connector [1].
4. Remove the mylar [2].
5. Remove the screw [3] and pressure/ retraction solenoid /cleaning blade [4].

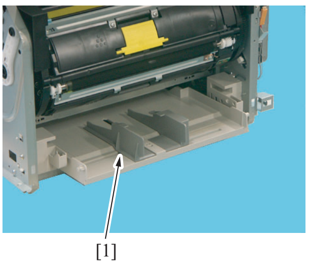
5.3.35 Temperature/humidity sensor (TEM/HUMS)

1. Remove the front cover.
   See P.33



4139F2C621DA

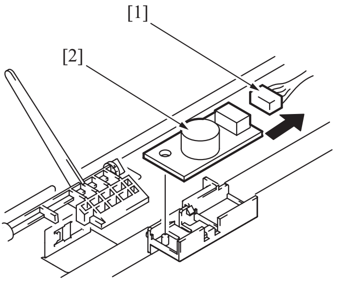
2. Remove the C-clip [1].



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3. Remove the tray 1 [1].

NOTE
- **Use care not to lose the two springs.**
- **Be careful not to damage the actuator of the tray1 paper empty sensor.**

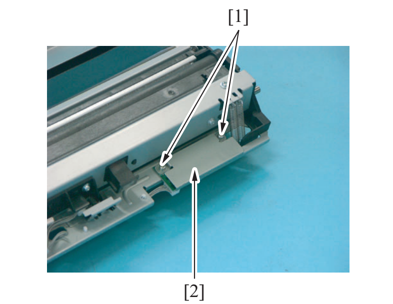


4139F2C623DA

4. Disconnect the connector [1] and remove the temperature/humidity sensor [2].

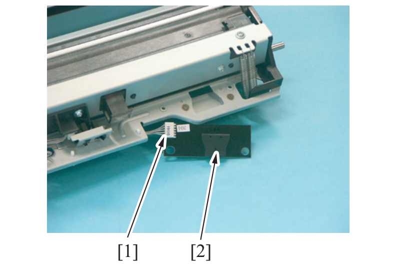
5.3.36 IDC sensor (IDC)

1. Remove the transfer belt unit.
   See P.17



4139F2C604DA

2. Remove two screws [1] and the IDC sensor protective cover [2].



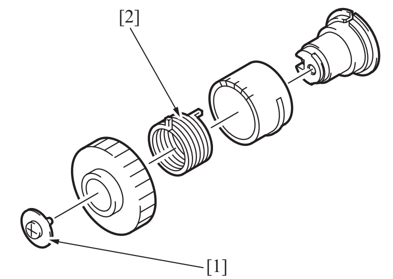
4139F2C603DA

3. Disconnect the connector [1] and remove the IDC sensor [2].

5.3.37 Torque limiter

A. Removal procedure

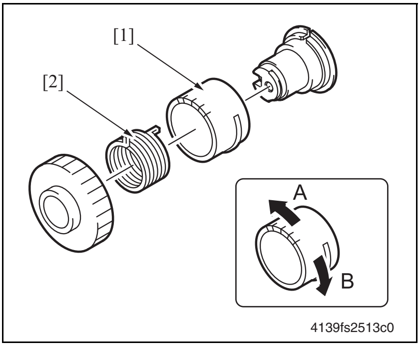
1. Remove the paper feed unit.
   See P.58



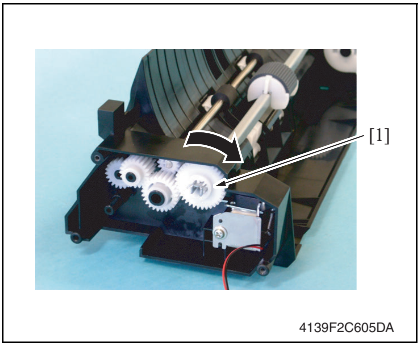
4139fs2512c0

2. Remove the screw [1] and the paper feed clutch.
3. Disassemble the paper feed clutch and remove the torque limiter [2].

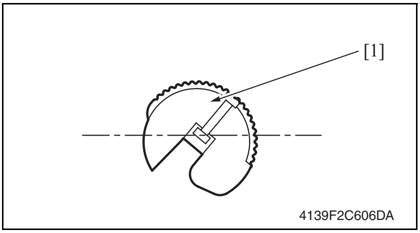
B. Reinstallation procedure



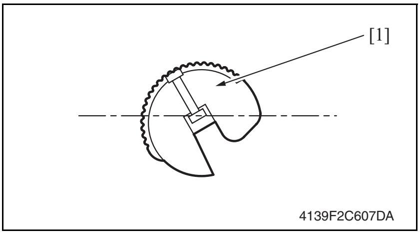
NOTE
- **There are five slots provided in the coupling gear [1] of the Paper Feed Clutch. These slots are for adjusting the position of the Feed Roller. When the torque limiter [2] is reinstalled, it is necessary to adjust the position of the coupling gear [1] and torque limiter [2] so that any paper take-up failure can be prevented.**



1. Install the paper feed clutch [1].
2. Turn the paper feed clutch [1] in the direction of the arrow shown on the left until it is engaged with the solenoid and stopped.

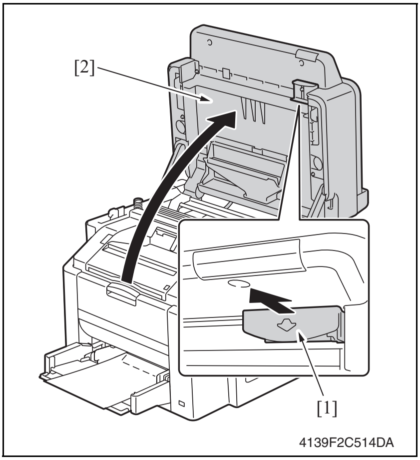


3. If the feed roller [1] tilts in the clockwise direction, turn the coupling gear of the paper feed clutch in the direction of A and reassemble the Paper Feed Clutch.



4. If the feed roller [1] tilts in the counterclockwise direction, turn the coupling gear of the paper feed clutch in the direction of B and reassemble the paper feed clutch.

5.3.38 Inlet assy

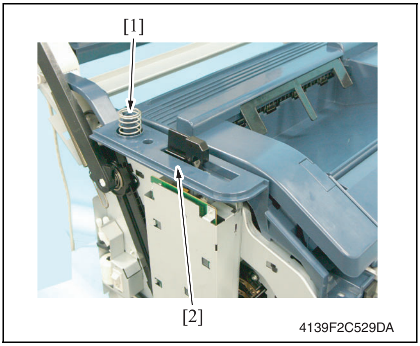


1. Pull the lever [1] and swing open the IR unit [2].

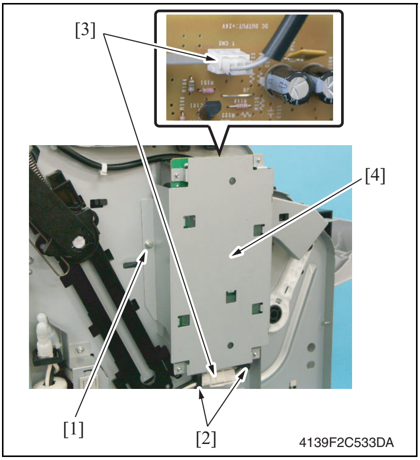
NOTE

- **Note that the IR unit cannot be swung up with the Auto Document Feeder Unit in its raised position.**

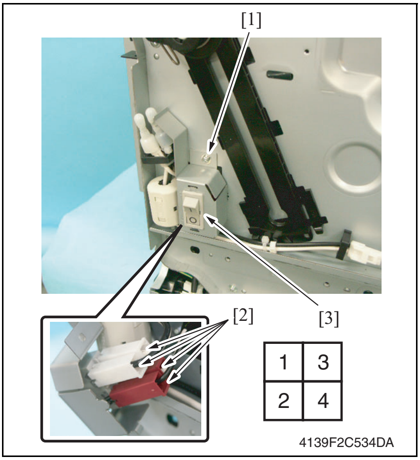
2. Remove the Auto Document Feeder Unit.
   See P.8 of the Auto Document Feeder Unit service manual.
3. Remove the IR unit.
   See P.50



4. Remove the screw [1] and the top left cover [2].



5. Remove the screw [1].
6. Remove two saddles [2] and disconnect two connectors [3]. Then, remove the DC power supply 2 protective cover [4].

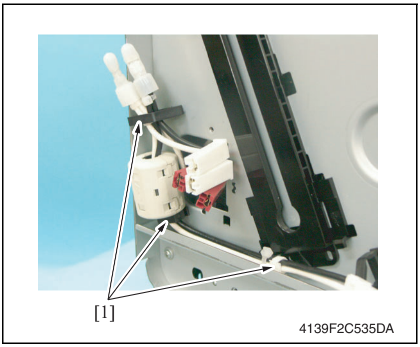


7. Remove the screw [1].
8. Disconnect four connectors [2] and remove the Power Switch [3].

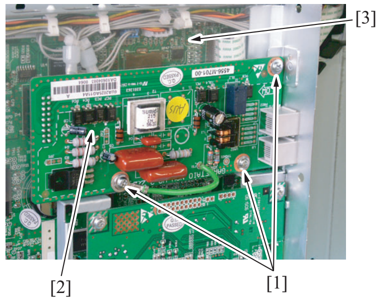
NOTE

- **At reinstallation, make sure of the correct position of each connector.**

	Color of connector	Color of harness
1	White	Black
2	Red	Black
3	White	White
4	Red	White



9. Remove three saddles [1] and free the harness.

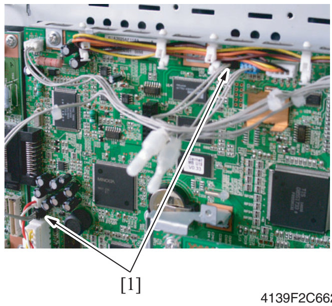


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10. Remove three screws [1] and the NCU board [2]. Then, remove the protection film [3].

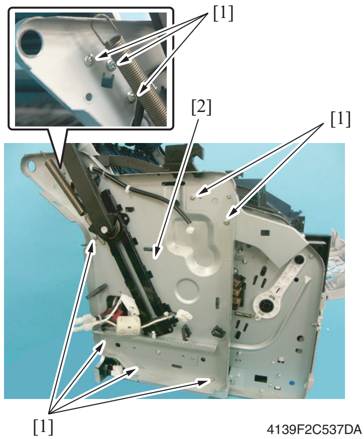
NOTE

- **Make sure to reinstall the protection film.**



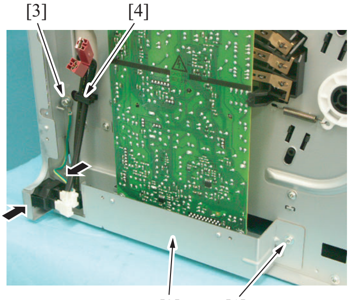
4139F2C662DA

11. Disconnect two connectors (MPJ2, MPJ3) [1] from the image processing board.



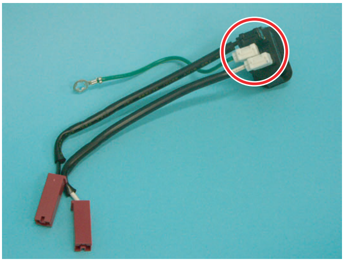
4139F2C537DA

12. Remove nine screws [1] and the left frame [2].



4139F2C541DA

13. Remove the screw [1] and remove the bracket [2].
14. Remove the screw [3] and the ground.
15. Remove the saddle [4]. Then, holding down the tabs, remove the inlet assy.

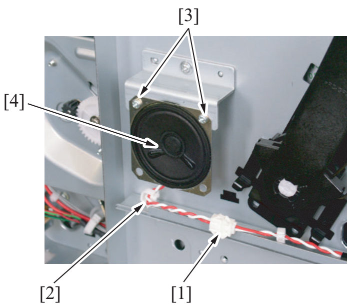

4139F2C542DA

⚠ CAUTION

- **NEVER unplug the faston terminals from the Inlet.**
  If the terminals are unplugged, do not use the inlet assy. Be sure to use a new inlet assy (Inlet + harnesses)

5.3.39 Speaker (SP)

1. Remove the right cover.
   See P.32



4139F2C675DA

2. Disconnect the connector [1] and remove the wire saddle [2].
3. Remove two screws [3] and remove the speaker [4].

Adjustment/Setting

6. How to use the adjustment section

- "Adjustment/Setting" contains detailed information on the adjustment items and procedures for this machine.
- Throughout this "Adjustment/Setting," the default settings are indicated by " ".

Advance checks

Before attempting to solve the customer problem, the following advance checks must be made. Check to see if:

- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
- The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
- The original has a problem that may cause a defective image.
- The density is properly selected.
- The original glass, slit glass, or related part is dirty.
- Correct paper is being used for printing.
- The units, parts, and supplies used for printing (developer, PC drum, etc.) are properly replenished and replaced when they reach the end of their useful service life.
- Toner is not running out.

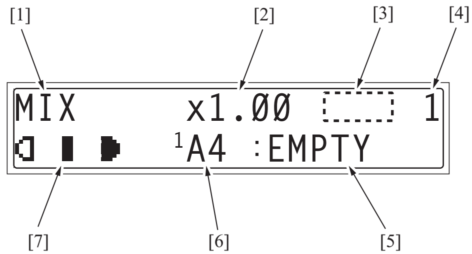
⚠ **CAUTION**

- **Be sure to unplug the power cord of the machine before starting the service job procedures.**
- **If it is unavoidably necessary to service the machine with its power turned ON, use utmost care not to be caught in the scanner cables or gears of the exposure unit.**
- **Special care should be used when handling the fusing unit which can be extremely hot.**
- **The developing unit has a strong magnetic field. Keep watches and measuring instruments away from it.**
- **Take care not to damage the PC drum with a tool or similar device.**
- **Do not touch IC pins with bare hands.**

7. Description of the control panel

7.1 Control panel display

7.1.1 Main screen



4139F3E506DA

No.	Name	Description
[1]	Document type	Displays the type of the document currently set.
[2]	Zoom ratio	Displays the zoom ratio currently set.
[3]	Icons that appear with copy operations	• : Appears when 2in1 copying is set. • : Appears when duplex (2-sided) copying is set. • : Appears when collated copying is set.
[4]	Number of copies	Displays the number of copies currently set to be made.
[5]	Status	Displays messages such as when media is empty. Displays messages such as when toner is low.
[6]	Media tray/media size	Indicates the media tray and media size that is selected.
[7]	Copy density	Displays the copy density currently set.

7.1.2 Toner supply screen

- Pressing the Display key will display the [TONER REMAINING] screen.
- Pressing the Cancel/C key will cause the Main screen to reappear.



4139F3E507DA

8. Menu mode

8.1 Menu mode function tree

- The press of the Menu/Select key will display the menu of the following functions.
- <*>: This function becomes available only when the optional tray2 is mounted on the machine.

Menu Mode			Ref. page
MACHINE SETTING	1 AUTO PANEL RESET		P.86
	2 ENERGY SAVE MODE		P.86
	3 LCD CONTRAST		P.86
	4 LANGUAGE		P.86
	5 LAMP OFF TIME		P.86
	6 BUZZER VOLUME		P.87
	7 INITIAL MODE		P.87
	8 TONER EMPTY STOP		P.87
	9 TONER NEAR EMPTY		P.87
	10 AUTO CONTINUE		P.87
	11 CALIBRATION		P.88
	12 REMOTE MONITOR		P.88
PAPER SOURCE SETUP	TRAY1 PAPER	PLAIN PAPER	P.89
		TRANSPARENCY	
		LABELS	
		LETTERHEAD	
		ENVELOP	
		POSTCARD	
		THICK STOCK	
		GLOSSY	
	TRAY2 PAPER <*>		P.89
COPY SETTING	1 MODE		P.90
	2 DENSITY LEVEL (A)		P.90
	3 DENSITY LEVEL (M)		P.90
	4 COLLATE		P.90
	5 QUALITY		P.90
	6 PAPER PRIORITY		P.91
FAX REGISTRATION	1 ONE-TOUCH DIAL		P.91
	2 SPEED DIAL		P.91
	3 GROUP DIAL		P.91
TX SETTING	1 SCAN DENSITY		P.92
	2 RESOLUTION		P.92
	3 HEADER		P.92

Menu Mode				Ref. page
RX SETTING	1 MEMORY RX MODE			P.93
	2 NO. of RINGS			P.93
	3 REDUCTION RX			P.93
	4 RX PRINT			P.97
	5 RX MODE			P.98
	6 FOOTER			P.98
	7 SELECT TRAY			P.98
COMM. SETTING	1 TEL LINE TYPE			P.99
	2 LINE MONITOR			P.99
	3 PSTN/PBX			P.99
REPORTING	1 ACTIVITY REPORT			P.100
	2 TX RESULT REPORT			P.100
	3 RX RESULT REPORT			P.100
USER SETTING	1 FAX PTT SETTING			P.101
	2 DATE&TIME	HOUR		P.101
		MINUTE		
		YEAR		
		MONTH		
		DAY		
	3 DATE FORMAT			P.101
	4 PRESET ZOOM			P.101
	5 USER FAX NO.			P.102
	6 USER NAME			P.102
DIRECT PRINT	1 IMAGE QUALITY			P.102
	2 PAPER SIZE	TRAY1	PLAIN PAPER	P.102
			LABELS	
			POSTCARD	
			THICK STOCK	
			GLOSSY	
		TRAY2		
	3 N-UP LAYOUT			P.103
NETWORK SETTING	1 IP ADDRESS			P.103
	2 SUBNET MASK			P.103
	3 GATEWAY			P.104
	4 DNS CONFIG.			P.104
	5 DDNS CONFIG.			P.104

Menu Mode		Ref. page
E-MAIL SETTING	1 SENDER NAME	P.105
	2 E-MAIL ADDRESS	P.105
	3 SMTP SERVER	P.105
	4 SMTP PORT NO.	P.105
	5 SMTP TIMEOUT	P.105
	6 TEXT INSERT	P.106
	7 DEFAULT SUBJECT	P.106
SCANNER SETTING	1 RESOLUTION	P.106
	2 IMAGE FORMAT	P.106
	3 CODING METHOD	P.106

8.2 MACHINE SETTING

8.2.1 AUTO PANEL RESET

Function	• Sets the period of time after which the initial screen reappears after the last print job is received or the last panel key is operated.
Use	• To set the period of time by executing auto panel reset.
Setting/ procedure	• The default setting is ON. "ON" OFF • The default setting is "1" if ON is selected. 0.5 (min) "1 (min)" 2 (min) 3 (min) 4 (min) 5 (min)

8.2.2 ENERGY SAVE MODE

Function Use	• To specify the time until the machine enters Energy Save mode after a copy cycle has been completed or after the last key operation.
Setting/ procedure	• The default setting is 30 minutes. 5 (5 min) 15 (15 min) "30 (30 min)" 60 (60 min)

8.2.3 LCD CONTRAST

Function	• Sets the brightness of the LCD display.
Use	• To set the brightness of the LCD display.
Setting/ procedure	• The default setting is ◧□■□□◨ . LIGHT -1 "0" +1 +2 DARK

8.2.4 LANGUAGE

Function	• Sets the language of the control panel display.
Use	• To change the language of the control panel display.
Setting/ procedure	• The default setting is ENGLISH. "ENGLISH" FRENCH GERMAN ITALIAN SPANISH PORTUGUESE RUSSIAN CZECH SLOVAKIAN HUNGARIAN POLISH JAPANESE **NOTE** **• The default setting of language is subject to the setting of [FAX PTT SETTING].**

8.2.5 LAMP OFF TIME

Function	• Sets the timing at which the scanner unit lamp turns OFF.
Use	• MODE1: When four hours have passed since the last operation was performed • MODE2: When the machine enters Energy Save mode
Setting/ procedure	• The default setting is MODE1. "MODE1" MODE2

8.2.6 BUZZER VOLUME

Function Use	• To set the volume of alarms and the beep sounded when a key is pressed.
Setting/ procedure	• The default setting is LOW. HIGH “LOW” OFF

8.2.7 INITIAL MODE

Function Use	• To set the mode (Copy mode or Fax mode) that the machine starts up in or returns to after the Control Panel is reset.
Setting/ procedure	• The default setting is COPY. “COPY” FAX

8.2.8 TONER EMPTY STOP

Function	• Specifies whether to stop or continue printing when a toner empty condition is detected.
Use	• To permit printing upon a toner empty condition.
Setting/ procedure	• The default setting is ON. “ON” ON (FAX) OFF ON: If [ON] is selected, printing, copying and faxing stop when the toner runs out. ON (FAX): If [ON (FAX)] is selected, only faxing stops when the toner runs out. OFF: If [OFF] is selected, printing, copying and faxing do not stop when the toner runs out.

8.2.9 TONER NEAR EMPTY

Function	• To set whether to display a message when a toner near empty state is detected.
Use	• Use this setting to display a message when a toner near empty state is detected.
Setting/ procedure	• The default setting is OFF. ON “OFF”

8.2.10 AUTO CONTINUE

Function	• Enables or disables printing when the size of the media loaded in the tray does not match that of the print data.
Use	• To print data on the media loaded in the tray if the media loaded in the tray does not match that of the print data.
Setting/ procedure	• The default setting is OFF. ON “OFF”

8.2.11 CALIBRATION

Function	• Executes the image stabilization sequence.
Use	• To calibrate the engine when there are print image quality problems. • To calibrate the engine when the transfer belt unit and 2nd transfer roller are replaced with new ones.
Setting/ procedure	• The default setting is OFF. ON “OFF” *1.* Select [MACHINE SETTING] and then [10 CALIBRATION], and press the Menu Select key. *2.* Select [ON] and press the Menu Select key. *3.* Image stabilization is executed.

8.2.12 REMOTE MONITOR

Function Use	• To set whether the service side should monitor user equipment remotely.
Setting/ procedure	• The default setting is OFF. ON “OFF”

8.3 PAPER SOURCE SETUP

8.3.1 TRAY1 PAPER

<table>
<tr><td>Function</td><td>• Sets the type and size of the paper loaded in tray1.</td></tr>
<tr><td>Use</td><td>• When the type and size of the paper loaded in tray1 have been changed
• The default setting varies according to the voltage of the printer.</td></tr>
<tr><td>Setting/ procedure</td><td>• The default setting is PLAIN PAPER.

“PLAIN PAPER” TRANSPARENCY LABELS LETTERHEAD
ENVELOPE POSTCARD THICK STOCK GLOSSY

• Default setting of paper size depend on the marketing area setting.
USA and Canada: “LETTER”, Other country: “A4”

<PLAIN PAPER, LETTERHEAD>
LETTER, G LETTER, STATEMENT, EXECUTIVE, FOLIO, OFICIO, A4, B5, A5, LEGAL

NOTE
• “OFICIO” only display when PTT=MEXICO.

<TRANSPARENCY, LABELS, THICK PAPER, GLOSSY>
LETTER, G LETTER, STATEMENT, EXECUTIVE, A4, B5, A5

<ENVELOPE>
"COM10”, C5, C6, DL, MONARCH, CHOU #3, YOU #4, CHOU #4

<POSTCARD>
“DOUBLE POSTCARD”, J-POSTCARD</td></tr>
</table>

8.3.2 TRAY2 PAPER

<table>
<tr><td>Function</td><td>• Sets the size of the paper loaded in tray2.
• This function becomes available only when the optional tray2 is mounted in the machine.</td></tr>
<tr><td>Use</td><td>• To set the size of paper loaded in tray2 according to that actually loaded.</td></tr>
<tr><td>Setting/ procedure</td><td>• PLAIN PAPER only
• Default setting of paper size depend on the marketing area setting.
USA and Canada: “LETTER”, Other country: “A4”

LETTER A4</td></tr>
</table>

8.4 COPY SETTING

8.4.1 MODE

Function	• Sets the type of document used.
Use	• When the type of document has been changed
Setting/ procedure	• The default setting is MIX. “MIX” TEXT PHOTO MIX: Mix manual density TEXT: Text auto density, Text manual density PHOTO: Photo manual density

8.4.2 DENSITY LEVEL (A)

Function	• To set the density level when the Auto density is selected.
Use	
Setting/ procedure	• The default setting is . LIGHT -1 “0” +1 DARK

8.4.3 DENSITY LEVEL (M)

Function	• To set the density level when the Manual density is selected.
Use	
Setting/ procedure	• The default setting is . LIGHT -3 -2 -1 “0” +1 +2 +3 DARK

8.4.4 COLLATE

Function	• Set initial value of sort function
Use	• OFF: Initial setting is non-sort mode • ON: Initial setting is sort mode
Setting/ procedure	• The default setting is OFF. ON “OFF”

8.4.5 QUALITY

Function	• Sets the print resolution.
Use	• To change the print resolution
Setting/ procedure	• The default setting is NORMAL. “NORMAL” FINE NORMAL: 600 x 300 dpi FINE: 600 x 600 dpi

8.4.6 PAPER PRIORITY

Function	• Selects the priority tray.
Use	• To change the priority tray
Setting/ procedure	• The default setting is TRAY1. “TRAY1” TRAY2 **NOTE** **• [*NOT AVAILABLE*] is displayed if tray2 is not mounted in the machine.**

8.5 FAX REGISTRATION

8.5.1 ONE-TOUCH DIAL

Function Use	• This function can be used to program one-touch dial keys with fax numbers, allowing the recipient to be specified easily and accurately without the need to manually enter the number using the 10-Key Pad. This dialing method is convenient for programming numbers where faxes are frequently sent to.
Setting/ procedure	• A maximum of 9 fax numbers can be programmed. The contents of registration. • Destination name: 20 characters. • Dial No.: 50 digits. • Modem speed: “33.6” (kbps) / 14.4 (kbps) / 9.6 (kbps)

8.5.2 SPEED DIAL

Function Use	• This function can be used to program speed dial numbers with fax numbers, allowing the recipient to be specified easily and accurately without the need to manually enter the number using the 10-Key Pad.
Setting/ procedure	• A maximum of 100 fax numbers (001 to 100) can be programmed. The contents of registration. • Destination name: 20 characters. • Dial No.: 50 digits. • Modem speed: 33.6 kbps / 14.4 kbps / 9.6 kbps

8.5.3 GROUP DIAL

Function Use	• This function can be used to program a single one-touch dial key with a maximum of 50 different fax numbers as one group. Programming a one-touch dial key with a group of fax numbers is convenient when documents are frequently sent to a set group of multiple recipients.
Setting/ procedure	The contents of registration. • Group name: 20 characters. • Information of destination station: The contents of ONE-TOUCH DIAL or SPEED DIAL.

8.6 TX SETTING

8.6.1 SCAN DENSITY

Function	• This function can be used to set the default scanning contrast level to one of three settings between [LIGHT] and [DARK].
Use	• For dark-colored paper (media), select a setting towards [LIGHT]. For faint or colored text, select a setting toward [DARK].
Setting/ procedure	• The default setting is  . LIGHT -1 "0" +1 DARK

8.6.2 RESOLUTION

Function Use	• This function can be used to set the default scanning resolution (image quality) to one of the following: [Standard], [Fine], [Super Fine], [Half Tone + Standard], [Half Tone + Fine] or [Half Tone + Super Fine].
Setting/ procedure	• The default setting is "STD". "STD": For documents containing normal text (such as handwriting) (Standard) FINE: For documents containing small text S/F: For documents such as newspapers or those containing detailed illustrations (Super Fine) H/T: For documents with shades, such as photos (Half Tone) **NOTE** **• If [H/T] was selected, a screen appears, allowing you to select a detailed setting [STD], [FINE] or [S/F].**

8.6.3 HEADER

Function Use	• This function can be used to set the default setting (ON or OFF) for adding the header (date sent, sender's name and fax number, etc.) when sending faxes.
Setting/ procedure	• The default setting is ON. "ON": Add header OFF: No header **NOTE** **• For USA, CANADA, KOREA, Header print is set ON, and setting change to OFF by the user is not allowed.** The contents of registration. • TX data and time. • Transmitter's own name. • Transmitter's own tel number. • Session number. • Page number. • Total page number (only displayed by use the memory TX job). It is selectable by soft switch to transmit only pages which have failed to transmit, if communication error occurs on the way transmitting document. In this case, page number on Header Print is continued from the page number of the document successfully transmitted. Whether user setting is allowed or not is selectable with Soft switch. Attaching Header Print: • Image within 4 mm (1/4 in.) top margin of transmitting document is not transmitted and Header print data is attached.

8.7 RX SETTING

8.7.1 MEMORY RX MODE

Function Use	• This function can be used to set whether to allow [ON] memory reception or not [OFF]. In cases when confidential faxes are being received, the received document can be stored in the memory and printed at a specified time or when memory reception is set to [OFF]. A password can be set to specify the starting time or ending time of memory reception, or to cancel the function. The set starting time and ending time are valid every day until memory reception is turned off.
Setting/ procedure	• The default setting is OFF. ON: Enable memory RX mode “OFF”: Disable memory RX mode

8.7.2 NO. of RINGS

Function Use	• This function can be used to set the number of rings between 1 and 16 until the call is answered.
Setting/ procedure	• The default setting is 2. • Depend on soft switch setting of marketing area. 1: Once “2”: Twice 3: 3 times 4: 4 times 5: 5 times 6: 6 times 7: 7 times 8: 8 times 9: 9 times 10: 10 times 11: 11 times 12: 12 times 13: 13 times 14: 14 times 15: 15 times 16: 16 times

8.7.3 REDUCTION RX

Function Use	• This function can be used to set whether documents longer than the paper are printed reduced [ON], split [OFF], or discarded [CUT]. However, when sending a document more than 24 mm (1 inch) longer than the paper, [CUT] is not available. (In this case, the document is split.)
Setting/ procedure	• The default setting is ON. “ON”: Reduction print mode OFF: 100% RX mode CUT: Cut mode

(1) Reduction print mode

- It reduces (only the FD direction) and prints so that receiving data will in a recording paper.

Recording paper size	Footer	Length of received image	Printing
A4	OFF	Less than 289 mm	1 page with 100%
		290 mm to 385 mm	1 page with (289 mm / image length)% reduction
		386 mm to 570 mm	Divide into 2 pages with 100%
		571 mm to 851 mm	Divide into 3 pages with 100%
		852 mm or more	Divide into 4 pages (or more) with 100%
	ON	Less than 285 mm	1 page with 100%
		286 mm to 381 mm	1 page with (285 mm / image length)% reduction
		382 mm to 562 mm	Divide into 2 pages with 100%
		563 mm to 839 mm	Divide into 3 pages with 100%
		840 mm or more	Divide into 4 pages (or more) with 100%
Letter	OFF	Less than 271 mm	1 page with 100%
		272 mm to 387 mm	1 page with (271 mm / image length)% reduction
		388 mm to 534 mm	Divide into 2 pages with 100%
		535 mm to 797 mm	Divide into 3 pages with 100%
		798 mm or more	Divide into 4 pages (or more) with 100%
	ON	Less than 267 mm	1 page with 100%
		268 mm to 381 mm	1 page with (267 mm / image length)% reduction
		382 mm to 526 mm	Divide into 2 pages with 100%
		527 mm to 785 mm	Divide into 3 pages with 100%
		786 mm or more	Divide into 4 pages (or more) with 100%
Legal	OFF	Less than 347 mm	1 page with 100%
		348 mm to 385 mm	1 page with (347 mm / image length)% reduction
		386 mm to 686 mm	Divide into 2 pages with 100%
		687 mm to 1,025 mm	Divide into 3 pages with 100%
		1,026 mm or more	Divide into 4 pages (or more) with 100%
	ON	Less than 343 mm	1 page with 100%
		344 mm to 381 mm	1 page with (343 mm / image length)% reduction
		382 mm to 678 mm	Divide into 2 pages with 100%
		679 mm to 1,013 mm	Divide into 3 pages with 100%
		1,014 mm or more	Divide into 4 pages (or more) with 100%

Recording paper size	Footer	Length of received image	Printing
Oficio	OFF	Less than 335 mm	1 page with 100%
		336 mm to 385 mm	1 page with (335 mm / image length)% reduction
		386 mm to 662 mm	Divide into 2 pages with 100%
		663 mm to 989 mm	Divide into 3 pages with 100%
		990 mm or more	Divide into 4 pages (or more) with 100%
	ON	Less than 331 mm	1 page with 100%
		332 mm to 381 mm	1 page with (331 mm / image length)% reduction
		382 mm to 654 mm	Divide into 2 pages with 100%
		655 mm to 977 mm	Divide into 3 pages with 100%
		978 mm or more	Divide into 4 pages (or more) with 100%

(2) 100% RX mode

- All receiving data is divided into 2 pages or more, and is printed.

Recording paper size	Footer	Length of received image	Printing
A4	OFF	Less than 289 mm	1 page
		290 mm to 570 mm	Divide into 2 pages
		571 mm to 851 mm	Divide into 3 pages
		852 mm or more	Divide into 4 pages or more
	ON	Less than 285 mm	1 page
		286 mm to 562 mm	Divide into 2 pages
		563 mm to 839 mm	Divide into 3 pages
		840 mm or more	Divide into 4 pages or more
Letter	OFF	Less than 271 mm	1 page
		272 mm to 534 mm	Divide into 2 pages
		535 mm to 797 mm	Divide into 3 pages
		798 mm or more	Divide into 4 pages or more
	ON	Less than 267 mm	1 page
		268 mm to 526 mm	Divide into 2 pages
		527 mm to 785 mm	Divide into 3 pages
		786 mm or more	Divide into 4 pages or more
Legal	OFF	Less than 348 mm	1 page
		349 mm to 688 mm	Divide into 2 pages
		689 mm to 1,028 mm	Divide into 3 pages
		1,029 mm or more	Divide into 4 pages or more
	ON	Less than 344 mm	1 page
		345 mm to 680 mm	Divide into 2 pages
		681 mm to 1,016 mm	Divide into 3 pages
		1,017 mm or more	Divide into 4 pages or more

Recording paper size	Footer	Length of received image	Printing
Oficio	OFF	Less than 335 mm	1 page
		356 mm to 662 mm	Divide into 2 pages
		663 mm to 989 mm	Divide into 3 pages
		990 mm or more	Divide into 4 pages or more
	ON	Less than 331 mm	1 page
		332 mm to 654 mm	Divide into 2 pages
		655 mm to 977 mm	Divide into 3 pages
		978 mm or more	Divide into 4 pages or more

(3) Cut mode

- The data that is larger than 1-page record area is cut and not recorded (to 24 mm).

Recording paper size	Footer	Length of received image	Printing
A4	OFF	Less than 289 mm	1 page
		290 mm to 313 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		314 mm to 570 mm	Divide into 2 pages
		571 mm to 594 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		595 mm to 851 mm	Divide into 3 pages
		852 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 285 mm	1 page
		286 mm to 309 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		310 mm to 562 mm	Divide into 2 pages
		563 mm to 586 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		587 mm to 839 mm	Divide into 3 pages
		840 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
Letter	OFF	Less than 271 mm	1 page
		272 mm to 295 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		296 mm to 534 mm	Divide into 2 pages
		535 mm to 558 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		559 mm to 797 mm	Divide into 3 pages
		798 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 267 mm	1 page
		268 mm to 291 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		292 mm to 526 mm	Divide into 2 pages
		527 mm to 550 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		551 mm to 785 mm	Divide into 3 pages
		786 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.

Recording paper size	Footer	Length of received image	Printing
Legal	OFF	Less than 347 mm	1 page
		348 mm to 371 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		372 mm to 686 mm	Divide into 2 pages
		687 mm to 710 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		711 mm to 1,025 mm	Divide into 3 pages
		1,026 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 343 mm	1 page
		344 mm to 367 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		368 mm to 678 mm	Divide into 2 pages
		679 mm to 702 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		703 mm to 1,013 mm	Divide into 3 pages
		1,014 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
Oficio	OFF	Less than 335 mm	1 page
		336 mm to 359 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		360 mm to 662 mm	Divide into 2 pages
		663 mm to 686 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		687 mm to 989 mm	Divide into 3 pages
		990 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 331 mm	1 page
		332 mm to 355 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		356 mm to 654 mm	Divide into 2 pages
		655 mm to 678 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		679 mm to 977 mm	Divide into 3 pages
		978 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.

8.7.4 RX PRINT

Function Use	• This function can be used to set whether the fax is only printed after all document pages have been received [MEMORY RX] or printing begins as soon as the first page of the document is received [PRINT RX].
Setting/ procedure	• The default setting is MEMORY RX. “MEMORY RX”: Printed after all document pages have been received. PRINT RX: Printing begins as soon as the first page of the document is received.

8.7.5 RX MODE

Function Use	• This function can be used to set the reception mode to automatic reception [AUTO RX] or manual reception [MANUAL RX]. • Automatic reception: Automatically begins receiving after the set number of rings. • Manual reception: Does not automatically receive the fax. Reception begins after making a connection by picking up the telephone receiver or pressing the On hook key, then pressing the Start key.
Setting/ procedure	• The default setting is AUTO RX. "AUTO RX": Automatic reception MANUAL RX: Manual reception

8.7.6 FOOTER

Function Use	• This function can be used to set whether or not the reception information (date received, number of pages, etc.) is printed at the bottom of each received document.
Setting/ procedure	• The default setting is OFF. ON: Add footer OFF: No footer

(1) Attaching footer print

When footer is selected ON, it is printed at the end of printable area. 4 mm line area from the end of printable area is kept for printing footer. It should be attached on footer area regardless of image length. If the received image is divided into 2 pages or more, footer is printed in the specified location of all the recording sheets of paper printed.

Image data area:

The received image data is printed on the area except for 12 mm from recording paper size. (No printable area: 8 mm ($^1/_3$ in) + footer area: 4 mm ($^1/_4$ in)) The following table is the image printable area of each recording paper size due to setting of footer print.

Paper length		Footer OFF	Footer ON	
		Image data area	Image data area	Footer area
A4S	297 mm	289 mm	285 mm	+4 mm
LetterS	279 mm	271 mm	267 mm	+4 mm
Legal	356 mm	348 mm	344 mm	+4 mm

8.7.7 SELECT TRAY

Function Use	• This function can be used to select which paper tray can be used to supply paper when printing received documents or transmission reports. (A paper tray that cannot be used for supplying paper can also be specified.) • This function is only available when an optional paper tray is installed.
Setting/ procedure	• The default setting is Enable. Tray1: "Enable" Disable Tray2: "Enable" Disable • A non-equipped cassette is not displayed. When setting value is determined, reception setting of utility menu is indicated. This setting has effect on RX print and Report print.

8.8 COMM. SETTING

8.8.1 TEL LINE TYPE

<table>
<tr><td>Function</td><td rowspan="2">• This function can be used to specify the dialing system. If this function is not correctly set to the type of dialing system used, faxes cannot be sent. Select the correct setting after checking which type of dialing system is used by your telephone line.
• There are two types of telephone dialing systems: tone dialing (PB) and pulse dialing (DP10pps or DP20pps). Faxes cannot be sent if this machine is not set to the system used by your telephone line. Select the correct setting after checking which type of dialing system is used.</td></tr>
<tr><td>Use</td></tr>
<tr><td>Setting/
procedure</td><td>• The default setting is TONE.

“TONE”: Tone line
PULSE 10pps: Pulse line of 10 pps
PULSE 20pps: Pulse line of 20 pps

NOTE
• In USA, GERMANY and NEW ZEALAND after selected this item displayed will display [*NOT AVAILABLE*].</td></tr>
</table>

8.8.2 LINE MONITOR

<table>
<tr><td>Function</td><td rowspan="2">• This function can be used to set the volume when monitoring communication to [HIGH], [LOW] or [OFF].</td></tr>
<tr><td>Use</td></tr>
<tr><td>Setting/
procedure</td><td>• The default setting is LOW.

HIGH “LOW” OFF</td></tr>
</table>

8.8.3 PSTN/PBX

<table>
<tr><td>Function</td><td rowspan="2">• This function can be used to set whether the connected telephone wiring is a public switched telephone network (PSTN) or a private branch exchange (PBX).
For a PBX system, the outside line access number (or extension number) must be specified.
• The connected wiring system can be set to either PSTN (Public Switched Telephone Network) or PBX (Private Branch Exchange). For a PBX system, the outside line access number (or extension number) must be specified. The outside line access number (or extension number) is programmed in the [#] key.</td></tr>
<tr><td>Use</td></tr>
<tr><td>Setting/
procedure</td><td>• The default setting is PSTN.

“PSTN”: Public Switched Telephone Network
PBX: Private Branch Exchange</td></tr>
</table>

8.9 REPORTING

8.9.1 ACTIVITY REPORT

Function Use	• Every 60 transmissions/receptions, a report can be printed to show the results of the transmissions/receptions. This function can be used to set whether the report is printed automatically when the 60th transmission/ reception is reached.
Setting/ procedure	• The default setting is ON. “ON” OFF

8.9.2 TX RESULT REPORT

Function Use	• This function can be used to set whether the report showing the result of a transmission is printed automatically after the transmission is finished.
Setting/ procedure	• The default setting is ON (ERROR). ON “ON (ERROR)” OFF ON: Prints the report after each transmission. ON (ERROR): Prints the report after a transmission only if an error occurred. OFF: Does not print the report after each transmission, even if an error has occurred.

8.9.3 RX RESULT REPORT

Function Use	• This function can be used to set whether the report showing the result of a reception is printed automatically after mailbox reception is finished. (If regular reception is not finished normally, a report will always be printed, regardless of the selected setting.)
Setting/ procedure	• The default setting is ON (ERROR). ON “ON (ERROR)” OFF ON: Prints the report after each reception. ON (ERROR): Prints the report after a reception only if an error occurred. OFF: Does not print the report after each reception, even if an error has occurred.

8.10 USER SETTING

8.10.1 FAX PTT SETTING

Function	• Sets the country where this machine is installed.
Use	• To change the country where this machine is installed.
Setting/ procedure	• The default setting is USA. "USA" UK VIETNAM ARGENTINA AUSTRALIA AUSTRIA BELGIUM BRAZIL CANADA CHINA CZECH DENMARK EUROPE FINLAND FRANCE GERMANY GREECE HONG KONG HUNGARRY ISRAEL ITALY JAPAN KOREA MALAYSIA MEXICO NETHERLANDS NEW ZEALAND NORWAY PHILIPPINES POLAND PORTUGAL RUSSIA SAUDI ARABIA SINGAPORE SLOVAKIA SOUTH AFRICA SPAIN SWEDEN SWITZERLAND TAIWAN TURKEY **NOTE** **When this setting was changed, the following settings will return to their default automatically.** **• [Language]** **• [PAPER SOURCE SETUP]** **• [DATE FORMAT]** **• [PRESET ZOOM]** **• [PAPER SIZE] in [DIRECT PRINT]** **• [SOFT SWITCH]**

8.10.2 DATE & TIME

Function	• Sets the date and time to be indicated on the output of print report.
Use	• At the installation or when date and time need to be changed.

8.10.3 DATE FORMAT

Function	• Sets the format of the date to be indicated on the output of PRINT REPORT.
Use	• To change the format of the date to be indicated on the output of PRINT REPORT
Setting/ procedure	• The default setting is MM/DD/YY. "MM/DD/YY" DD/MM/YY YY/MM/DD

8.10.4 PRESET ZOOM

Function	• Sets the type of paper for fixed zoom ratio setting.
Use	• To change the type of paper for fixed zoom ratio setting
Setting/ procedure	• The default setting is "INCH" (for the inch areas) or "METRIC" (for the metric areas). "INCH" "METRIC"

8.10.5 USER FAX NO.

Function	• Enter user fax number.
Use	• The specified number is printed in the header of sent faxes.
Setting/ procedure	• Max. 20 digits. • The characters which can be inputted are “numbers from 0 to 9”, “Space”, “+” and “-.”

8.10.6 USER NAME

Function Use	• The User Name is used for the indication of destination station at the time of the communication between same models.
Setting/ procedure	• Maximum 32 digits character can be inputted.

8.11 DIRECT PRINT

8.11.1 IMAGE QUALITY

Function	• Sets the output resolution for camera direct photo printing.
Use	• To change the output resolution for camera direct photo printing.
Setting/ procedure	• The default setting is DRAFT. “DRAFT (coarse)” NORMAL (normal) FINE (fine)

8.11.2 PAPER SIZE

Function	• Sets the paper size for camera direct photo printing.
Use	• To change the paper size for camera direct photo printing. • The default setting varies according to the voltage of the printer.
Setting/ procedure	<TRAY1> “PLAIN PAPER” LABELS POSTCARD THICK STOCK GLOSSY • When a setting other than [POSTCARD] or [GLOSSY] is selected: • The default setting is A4 or LETTER. “A4” B5 A5 “LETTER” STARTMENT • When a [POSTCARD] is selected: “A4” B5 A5 “LETTER” STARTMENT J-POSTCARD • When a [GLOSSY] is selected: “A4” B5 A5 “LETTER” STARTMENT PHOTO SIZE 4x6” PHOTO SIZE 10x15 LTR 2UP SPL A4 4UP SPL A4 2UP SPL <TRAY2> • The default setting is A4 or LETTER. “A4” “LETTER”

8.11.3 N-UP LAYOUT

Function	• Sets the number of images printed on one page for camera direct photo printing.
Use	• To specify the number of camera direct photo printing images to be printed on each sheet.
Setting/ procedure	• The default setting is 1. "1" 2 3 4 6 8

8.12 NETWORK SETTING

8.12.1 IP ADDRESS

Function	• This function is used to specify the IP address for the copier.
Use	**NOTE** **• Please consult customer's network administrator for information about the IP address to use.**
Setting/ procedure	• The default setting is AUTO. "AUTO" SPECIFY • If AUTO is selected, the IP address is automatically acquired from the DHCP server. **NOTE** **• AUTO is only enabled if there is a DHCP server available on the network.** **• When AUTO is selected, there is no need to set the SUBNET MASK or GATEWAY setting.** • If SPECIFY is selected, the screen for entering the IP address appears.

8.12.2 SUBNET MASK

Function	• This function is used to specify the subnet mask value for the network.
Use	**NOTE** **• Please consult customer's network administrator for information about the subnet mask to use.**
Setting/ procedure	• Setting LAN connect to WAN the net mask address. **NOTE** **• If Auto is selected for [IP ADDRESS], the items of [SUBNET MASK] and [GATEWAY] are automatically set. Key entry is therefore disabled for [SUBNET MASK] and [GATEWAY].**

8.12.3 GATEWAY

Function Use	• This function is used to specify the default gateway (IP address) of a router on the network. **NOTE** **• Please consult customer's network administrator for information about the gateway to use.**
Setting/ procedure	• Setting LAN address. **NOTE** **• If Auto is selected for [IP ADDRESS], the items of [SUBNET MASK] and [GATEWAY] are automatically set. Key entry is therefore disabled for [SUBNET MASK] and [GATEWAY].**

8.12.4 DNS CONFIG.

Function Use	• This function is used to enable or disable the DNS (Domain Name System) setting. If there is a DNS server on your network, enter the IP address of the DNS server. • If the DNS server is located within your local network, select [ENABLE]. If you are using the DNS server of an Internet service provider (ISP) or some other DNS server located outside your local network, select [DISABLE]. **NOTE** **• Please consult customer's network administrator for details.**
Setting/ procedure	• The default setting is DISABLE. "DISABLE" ENABLE

8.12.5 DDNS CONFIG.

Function Use	• This function is used to enable or disable the DDNS (Dynamic Updates in the Domain Name System) setting.
Setting/ procedure	• The default setting is ENABLE. DISABLE "ENABLE"

8.13 E-MAIL SETTING

8.13.1 SENDER NAME

Function / Use	• This function is used to specify the sender's name.
Setting/ procedure	• The default setting is magicolor 2590MF. • Up to 20 characters can be entered for the sender name.

8.13.2 E-MAIL ADDRESS

Function	• This function is used to specify the e-mail address of the sender.
Use	**NOTE** **• Please consult customer's network administrator for information about the e-mail address to use.**
Setting/ procedure	• Up to 64 characters can be entered for the sender address. • If customer does not receive e-mail on the copier, enter the e-mail address of the customer's administrator.

8.13.3 SMTP SERVER

Function	• This function is used to enter the IP address or host name of an SMTP server.
Use	**NOTE** **• Please consult customer's network administrator for information about the IP address to use.**
Setting/ procedure	• Up to 64 characters can be entered for the host name. • The DNS settings must have been specified before specifying the host name for the SMTP server.

8.13.4 SMTP PORT NO.

Function	• This function is used to enter the port number (1 to 65535) for the SMTP server.
Use	**NOTE** **• Please consult customer's network administrator for information about the port number to use.**
Setting/ procedure	• The port number can be set between 1 and 65535. • Normally, port number 25 is used.

8.13.5 SMTP TIMEOUT

Function / Use	• This function is used to specify the length of time (in seconds) before the connection to the SMTP server times out. (30 to 300 seconds)
Setting/ procedure	• The default setting is 60. • The time out period can be between 30 and 300 seconds.

8.13.6 TEXT INSERT

Function Use	• This function is used to specify whether or not to insert text explaining that an image has been attached to an e-mail message, when sending scan data as an E-mail attachment.
Setting/ procedure	• The default setting is OFF. ON "OFF" • ON: If ON is selected, the following text is inserted in the e-mail message. • OFF: If OFF is selected, a blank e-mail message will be sent.

8.13.7 DEFAULT SUBJECT

Function Use	• This function is used to specify the default subject line, when sending scan data as an e-mail attachment.
Setting/ procedure	• The default setting is From mc2590MF. • Up to 20 characters can be entered for the default subject.

8.14 SCANNER SETTING

8.14.1 RESOLUTION

Function Use	• The default settings for resolution used by the scan to e-mail functions can be specified.
Setting/ procedure	• The default setting is 300 x 300. 150 x 150 "300 x 300" 600 x 600

8.14.2 IMAGE FORMAT

Function Use	• The default settings for data format used by the scan to e-mail functions can be specified.
Setting/ procedure	• The default setting is PDF. TIFF "PDF"

8.14.3 CODING METHOD

Function Use	• The default settings for coding method, used by the scan to e-mail functions can be specified.
Setting/ procedure	• The default setting is MH. "MH" MR MMR

9. User service mode

9.1 User service mode function tree

A. Procedure

1. On the initial screen, press the Menu/Select key to call [MACHINE SETTING] to the screen.
2. Keep on pressing ◀ key over two seconds.

B. Exiting

- Press the Stop/Reset key.

MAINTENANCE		Ref. page
1. FAX MAINTENANCE	TX SPEED	P.108
	RX SPEED	P.108
	TX LEVEL	P.108
	RX LEVEL	P.108
	DTMF LEVEL	P.108
	CNG LEVEL	P.109
	CED LEVEL	P.109
	ECM MODE	P.109
	CODING SCHEME	P.109
	TONER EMPTY REPORT	P.110
	PROTOCOL REPORT	P.110
2. SRU USAGE	TRANSFER BELT	P.111
	FUSER UNIT	P.111
	TRANSFER ROLLER	P.111
3. RESET COUNT	TRANSFER BELT	P.111
	FUSER UNIT	P.111
	TRANSFER ROLLER	P.112
4. CCD MOVE TO HOME		P.112

9.2 FAX MAINTENANCE

9.2.1 TX SPEED

Function Use	• Transmit start speed setting. Choose the mode from among the following.
Setting/ procedure	• The default setting is V.34 33600. “V.34”: “33600”, 31200, 28800, 26400, 24000, 21600, 19200, 16800 V.17: 14400, 12000, 9600, 7200 V.29: 9600, 7200 V.27: 4800, 2400

9.2.2 RX SPEED

Function Use	• Reception start speed setting. Choose the mode from among the following.
Setting/ procedure	• The default setting is V.34 33600. “V.34”: “33600”, 31200, 28800, 26400, 24000, 21600, 19200, 16800 V.17: 14400, 12000, 9600, 7200 V.29: 9600, 7200 V.27: 4800, 2400

9.2.3 TX LEVEL

Function Use	• PSK/FSK signal output level.
Setting/ procedure	• The default setting is -9 dBm. -17 to -10 dBm “-9 dBm” -8 to -2 dBm

9.2.4 RX LEVEL

Function Use	• Reception sensitivity level.
Setting/ procedure	• The default setting is -43 dBm. -49 to -44 dBm “-43 dBm” -42 to -36 dBm

9.2.5 DTMF LEVEL

Function Use	• Dual tone output level.
Setting/ procedure	• The default setting is -9 dBm. -17 to -10 dBm “-9 dBm” -8 to -2 dBm

9.2.6 CNG LEVEL

Function	• Calling tone output level.
Use	
Setting/ procedure	• The default setting is -11 dBm. -17 to -12 dBm "-11 dBm" -10 to -2 dBm

9.2.7 CED LEVEL

Function	• Answer tone output level.
Use	
Setting/ procedure	• The default setting is -11 dBm. -17 to -12 dBm "-11 dBm" -10 to -2 dBm

9.2.8 ECM MODE

Function	• Select error correction mode.
Use	
Setting/ procedure	• The default setting is ON. "ON": When an error occurs during communication, re-send the frame where the error occurs. OFF: Any error is ignored during communication.

9.2.9 CODING SCHEME

Function	• Select compression method in TX/ RX mode.
Use	
Setting/ procedure	• The default setting is JBIG. MMR: A compression method. MR: A compression method. MH: The simplest compression method. "JBIG": The most complex compression method that generates the smallest code than any of following ones.

9.2.10 TONER EMPTY REPORT

Function Use	• Select to generate a report to a specific destination when toner empty status occurs in the engine.
Setting/ procedure	• The default setting is OFF. ON: Generate a report to report destination. "OFF": Not to generate report. • If "ON" is selected, select generate report and send to remote side when toner runs out. • Enter the telephone number for which the report is to be produced. • Fax number specifications: An up-to-20-digit number that may consist of [0-9], [*], [#], [pause], and [space]. (0-9, #, *, pause, _) • The report will generate after 20 minutes, 24 hours, 48 hours, or 72 hours after the event has occurred or until the condition is gone.

A. Toner empty report (example)

SERVICE REPORT

NAME:ABC 123
TEL:1234567
DATE: Jul. 01.2006 15:12

The Fax's following conditions were appears, the machine may be can not work correctly, the Fax already send a report to your dealer automatically. They will contact with you soon.

Toner status : Empty

4139F3C544DA

9.2.11 PROTOCOL REPORT

Function Use	• Print communication report. • Choose one from among the following.
Setting/ procedure	• The default setting is OFF. "OFF": Disable T.30 communication report. ON: Print T.30 communication report. ON (ERROR): Print T.30 communication report when an error occurs.

9.3 SRU USAGE

9.3.1 TRANSFER BELT

Function	• Displays the remaining life of the transfer belt.
Use	• To check the remaining life of the maintenance service parts.

9.3.2 FUSER UNIT

Function	• Displays the remaining life of the fusing unit.
Use	• To check the remaining life of the maintenance service parts.

9.3.3 TRANSFER ROLLER

Function	• Displays the remaining life of the transfer roller.
Use	• To check the remaining life of the maintenance service parts.

9.4 RESET COUNT

9.4.1 TRANSFER BELT

Function	• Resets the counter value of the transfer belt unit. • Executes the image stabilization sequence.
Use	• To reset the transfer belt unit counter after the transfer belt unit is replaced.
Setting/ procedure	*1.* Enter the user service mode and call [3. RESET COUNT] to the screen. *2.* Select [TRANSFER BELT] and press the Menu Select key. *3.* Press the Menu Select key. *4.* Turn OFF the machine's main switch. *5.* When the machine's main switch is turned ON, the image stabilization is automatically executed.

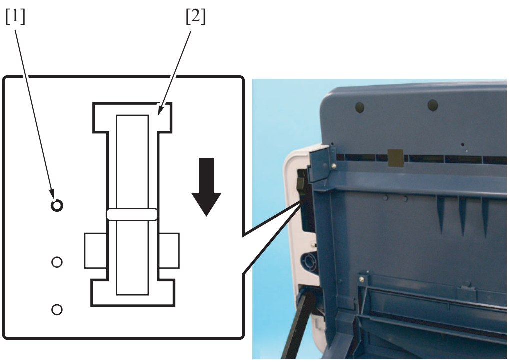
9.4.2 FUSER UNIT

Function	• Resets the counter value of the fuser unit.
Use	• To reset the fuser unit counter after the fuser unit is replaced.
Setting/ procedure	*1.* Enter the user service mode and call [3. RESET COUNT] to the screen. *2.* Select [FUSER UNIT] and press the Menu Select key. *3.* Press the Menu Select key.

9.4.3 TRANSFER ROLLER

Function	• Resets the counter value of the transfer roller. • Executes the image stabilization sequence.
Use	• To reset the transfer roller counter after the transfer roller is replaced.
Setting/ procedure	1. Enter the user service mode and call [3. RESET COUNT] to the screen. 2. Select [TRANSFER ROLLER] and press the Menu Select key. 3. Press the Menu Select key. 4. Turn OFF the machine's main switch. 5. When the machine's main switch is turned ON, the image stabilization is automatically executed.

9.5 CCD MOVE TO HOME

Function	• Moves the scanner unit to its home position for locking.
Use	• When transporting the machine
Setting/ procedure	1. Enter the user service mode. 2. Select [CCD MOVE TO HOME] and press the Menu Select key. 3. The scanner unit moves to the home position when the start key is pressed. 4. Turn OFF the machine's main switch. 5. Open the IR unit. Then, inserting a pin or similar object into the hole at portion [1], lower the lock lever [2].  4139F3C525DA **NOTE** • **After the transportation of the machine, make sure to unlock the scanner unit by raising the lock lever [2] before turning on the machine's main switch.**

10. Display mode

10.1 Display function tree

- Pressing the Display key will display the menu of the following functions.

DISPLAY		Ref. page
TONER REMAINING		P.113
TOTAL PAGE	B/W COPY	P.114
	COLOR COPY	P.114
	B/W PRINT	P.114
	COLOR PRINT	P.114
	FAX PRINT	P.114
	TOTAL SCAN	P.114
TX/RX RESULT		P.114
PRINT REPORT	TX RESULT REPORT	P.115
	RX RESULT REPORT	P.115
	ACTIVITY REPORT	P.115
	MEMORY DATA LIST	P.115
	MEMORY IMAGE PRINT	P.115
	ONE-TOUCH LIST	P.116
	SPEED DIAL LIST	P.116
	GROUP DIAL LIST	P.116
	MENU MAP	P.116
	CONFIGURATION PAGE	P.116
	DEMO PAGE	P.119

10.2 TONER REMAINING

Function	• Displays the amount of toner of each color still available for use.
Use	• For maintenance control of toner cartridges

10.3 PRINT STATUS

Function	• Displays the status of the machine while a print job is being received.
Use	• To check the machine for the status of receiving a print job

10.4 TOTAL PAGE

10.4.1 B/W COPY

Function	• Displays the number of monochrome copies made.
Use	• When checking the number of monochrome copies made

10.4.2 COLOR COPY

Function	• Displays the number of color copies made.
Use	• When checking the number of color copies made

10.4.3 B/W PRINT

Function	• Displays the number of monochrome printed pages produced.
Use	• When checking the number of monochrome printed pages produced

10.4.4 COLOR PRINT

Function	• Displays the number of color printed pages produced.
Use	• When checking the number of color printed pages produced.

10.4.5 FAX PRINT

Function	• Displays the total number of fax printed pages produced.
Use	• When checking the total number of fax printed pages produced.

10.4.6 TOTAL SCAN

Function	• Displays the number of scanner motions made during copying and scanning.
Use	• When checking the number of scanner motions made

10.5 TX/RX RESULT

Function	• Displays the transmission result information.
Use	• When checking the transmission result information.
Setting/ procedure	1. Press the Display key, then the ▼ key twice. 2. Check that the [TX/RX RESULT] screen appears, and then press the Menu Select key. The [TX/RX RESULT] screen appears so that the information can be checked. **NOTE** • **When the Start key is pressed, details of the report displayed on the screen can be printed.**

10.6 PRINT REPORT

10.6.1 TX RESULT REPORT

Function Use	• The [SESSION], [FUNCTION], [NO.], [DESTINATION STATION], [DATE], [TIME], [PAGE], [DURATION], [MODE], and [RESULT] are printed.
Setting/ procedure	*1.* Press the Display key, then the ▼ key three times. *2.* Check that the [PRINT REPORT] screen appears, and then press the Menu Select key. *3.* Select the [TX RESULT REPORT] and then press the Menu Select key.

10.6.2 RX RESULT REPORT

Function Use	• The [SESSION], [FUNCTION], [NO.], [DESTINATION STATION], [DATE], [TIME], [PAGE], [DURATION], [MODE], and [RESULT] are printed.
Setting/ procedure	*1.* Press the Display key, then the ▼ key three times. *2.* Check that the [PRINT REPORT] screen appears, and then press the Menu Select key. *3.* Select the [RX RESULT REPORT] and then press the Menu Select key.

10.6.3 ACTIVITY REPORT

Function Use	• The [NO.], [SESSION], [DATE], [TIME], [TX/RX], [DESTINATION STATION], [PAGE], [DURATION], [MODE], and [RESULT] are printed.
Setting/ procedure	*1.* Press the Display key, then the ▼ key three times. *2.* Check that the [PRINT REPORT] screen appears, and then press the Menu Select key. *3.* Select the [ACTIVITY REPORT] and then press the Menu Select key.

10.6.4 MEMORY DATA LIST

Function Use	• This is a list of documents waiting to be sent, and documents specified for timer transmission. The [SESSION], [FUNCTION], [TIME], [NO.], [DESTINATION STATION], and [PAGE] are printed.
Setting/ procedure	*1.* Press the Display key, then the ▼ key three times. *2.* Check that the [PRINT REPORT] screen appears, and then press the Menu Select key. *3.* Select the [MEMORY DATA LIST] and then press the Menu Select key.

10.6.5 MEMORY IMAGE PRINT

Function Use	• A reduced image of the first page of the document waiting to be sent in addition to the [SESSION], [FUNCTION], [NO.], [DESTINATION STATION], [DATE], [TIME], and [PAGE] are printed.
Setting/ procedure	*1.* Press the Display key, then the ▼ key three times. *2.* Check that the [PRINT REPORT] screen appears, and then press the Menu Select key. *3.* Select the [MEMORY IMAGE PRINT] and then press the Menu Select key.

10.6.6 ONE-TOUCH LIST

Function Use	• The recipients programmed in the one-touch dial keys are printed in numerical order of the keys.
Setting/ procedure	1. Press the Display key, then the ▼ key three times. 2. Check that the [PRINT REPORT] screen appears, and then press the Menu Select key. 3. Select the [ONE-TOUCH LIST] and then press the Menu Select key.

10.6.7 SPEED DIAL LIST

Function Use	• The recipients programmed for the speed dial numbers are printed in numerical order.
Setting/ procedure	1. Press the Display key, then the ▼ key three times. 2. Check that the [PRINT REPORT] screen appears, and then press the Menu Select key. 3. Select the [SPEED DIAL LIST] and then press the Menu Select key.

10.6.8 GROUP DIALA LIST

Function Use	• The group dialing settings specified for one-touch dial keys are printed in numerical order of the keys.
Setting/ procedure	1. Press the Display key, then the ▼ key three times. 2. Check that the [PRINT REPORT] screen appears, and then press the Menu Select key. 3. Select the [GROUP DIALA LIST] and then press the Menu Select key.

10.6.9 MENU MAP

Function Use	• Prints the current machine status.
Setting/ procedure	1. Press the Display key, then the ▼ key three times. 2. Check that the [PRINT REPORT] screen appears, and then press the Menu Select key. 3. Select the [MENU MAP] and then press the Menu Select key.

10.6.10 CONFIGURATION PAGE

Function	• Prints the current machine configuration.
Use	It is used to confirm the following settings. • Supplies Status • Coverage Information • Counter • Machine Setting • Network Setting • Firmware Version • Options • Fax Maintenance • Fax Settings
Setting/ procedure	1. Press the Display key, then the ▼ key three times. 2. Check that the [PRINT REPORT] screen appears, and then press the Menu Select key. 3. Select the [CONFIGURATION PAGE] and then press the Menu Select key.

A. Sample of Configuration Page

Configuration Page

DATE:24.SEP.2007 03:59

- Supplies Status -	Status	Remaining %	Cartridge Type
Toner Cartridge Cyan	Empty	0%	Standard
Toner Cartridge Magenta	Near Empty	4%	Standard
Toner Cartridge Yellow	Ready	88%	High
Toner Cartridge Black	Ready	90%	High
Drum Cartridge	Ready	80%	--

- Coverage Information - Normalization:All sizes converted to A4 equivalent.

Normalized Total Faces Counter			
Color Faces Printed	xxxxxx		
Monochrome Faces Printed	xxxxxx		
Total	xxxxxx		
Current Toner Cartridge Coverage			
Average % C	xxxx	Average % Y	xxxx
Average % M	xxxx	Average % K	xxxx

- Counter -

Total Faces Counter:	xxxxxx	Total Duplex Counter:	xxxxxx	Fax Counter	
Color Faces Counter		Color Sheets Counter		TX Counter	xxxxxx
Copy	xxxxxx	Copy	xxxxxx	RX Counter	xxxxxx
Printer	xxxxxx	Printer	xxxxxx	Scan Counter	xxxxxx
Monochrome Faces Counter		Monochrome Sheets Counter		Sheets Printed by Paper tray	
Copy	xxxxxx	Copy	xxxxxx	Tray1	xxxxxx
Printer	xxxxxx	Printer	xxxxxx	Tray2	xxxxxx
Fax	xxxxxx				

- Machine Setting -		- Network Setting -	
Controller Serial Number	xxxxxxxx	Network Interface	Ethernet 10Base T/100Base TX
Engine Serial Number	xxxxxxxxxx	DHCP	OFF
Auto Panel Reset(min)	1	BOOTP	OFF
Energy Save Mode(min)	15	IP Address	172. 16. 0.224
Language	ENGLISH	Subnet Mask	255.255.255. 0
Lamp Off Time	MODE 1	Gateway Address	172. 16. 0. 1
Auto Continue	ON	MAC Address	00:20:6B:76:82:13
Toner Empty Stop	ON	DNS Server	DISABLE
Toner Near Empty	ON	DDNS	ENABLE
Remote Monitor	OFF	SMTP Server	172. 18. 17.251

- Firmware Version -		- Fax Maintenance -	
Engine	4139-50G2-0900	TX Speed	33.6 kbps
Controller	4139-V100-A1	RX Speed	33.6 kbps
NIC	4139-V100-A1	TX Level	-9 dBm
FPGA code	V1.1	RX Level	-43 dBm
NAND code	V0.02	DTMF Level	-9 dBm
		CNG Level	-11 dBm
- Options -		CED Level	-11 dBm
Tray2	Not Installed	ECM Mode	ON
Duplex	Installed	Coding scheme	JBIG
		T/C Empty Report	OFF
		Protocol Report	OFF

- Fax Setting -		
Fax Number	xxxxxxxxxxxxxxxxxxxx	
Scan Density	0	
Resolution	STANDARD	
Header	ON	
No.of Rings	2	
Footer	OFF	
Tone/Pulse	TONE	
Line Monitor Volume	LOW	
TX Report	ON	
RX Report	OFF	0/ 7/ 0/ 5/ 0/ 3/ 0/ 3/100/ 0/ 96/ 0/100/ 0

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B. Supplies Status

- Display the estimated percent of life remaining in the toner cartridge and print unit.
  The type of the toner cartridges that are installed in the printer is also displayed (See the table below).

Types of toner cartridges	
Standard	Standard-capacity toner cartridge: 1.5 K
High	High-capacity toner cartridge: 4.5 K

NOTE

- **The percent of life remaining in the toner cartridge or print unit can be used as a guide, but may not exactly reflect the amount that has been used in the toner cartridge or print unit.**

C. Coverage Information

- The total number of pages that have been printed is counted and displayed based on the description shown in the following table.

Types of count	Count condition
Color Faces Printed	• Counts by converting the size outputted in color to a value corresponding to A4 pages. 1-sided (A4): Counts +1; 2-sided (A4): Counts +2
Monochrome Faces Printed	• Counts by converting the size outputted in monochrome to a value corresponding to A4 pages. 1-sided (A4): Counts +1; 2-sided (A4): Counts +2
Total	• Total count of the above printed pages in color and monochrome

D. How to read consumable/periodic replacement parts (units) counter information.

- The lower right part of the configuration page shows numerical values that represent consumable/periodic replacement parts (units) counter information.
  The table below explains counter information that is provided by each numerical data.

(1) Display on the configuration page

No.	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
Display	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0/	0

(2) Meaning of counter value

No.	Contents
[1]	Number of times a High-capacity toner cartridge (K) has been replaced
[2]	Number of times a Standard-capacity toner cartridge (K) has been replaced
[3]	Number of times a High-capacity toner cartridge (C) has been replaced
[4]	Number of times a Standard-capacity toner cartridge (C) has been replaced
[5]	Number of times a High-capacity toner cartridge (M) has been replaced
[6]	Number of times a Standard-capacity toner cartridge (M) has been replaced
[7]	Number of times a High-capacity toner cartridge (Y) has been replaced
[8]	Number of times a Standard-capacity toner cartridge (Y) has been replaced
[9]	Rate of transfer roller remaining (%)
[10]	Number of times a transfer roller has been replaced
[11]	Rate of transfer belt unit remaining (%)
[12]	Number of times a transfer belt unit has been replaced

No.	Contents
[13]	Rate of fusing unit remaining (%)
[14]	Number of times a fusing unit has been replaced

10.6.11 DEMO PAGE

Function	• Prints the demo page.
Use	
Setting/ procedure	*1.* Press the Display key, then the ▼ key three times. *2.* Check that the [PRINT REPORT] screen appears, and then press the Menu Select key. *3.* Select the [DEMO PAGE] and then press the Menu Select key.

11. SERVICE MODE

11.1 SERVICE MODE entry procedure

NOTE

- **Ensure appropriate security for the Service Mode entry procedure. It should NEVER be given to any unauthorized person.**

A. Procedure

1. On the initial screen, press the Menu/Select key to call [MACHINE SETTING] to the screen.

2. Press the following keys in this order.
Stop → 0 → 0 → Stop → 0 → 1

B. Exiting

- Press the Stop/Reset key.

11.2 SERVICE MODE function tree

- The function tree is shown to comply with the format displayed on the screen.
- <*>: This function becomes available only when the optional tray2 is mounted on the machine.

SERVICE MODE		Ref. page
1. SERVICE'S CHOICE	TX SPEED	P.123
	RX SPEED	P.123
	TX LEVEL	P.123
	RX LEVEL	P.123
	DTMF LEVEL	P.123
	CNG LEVEL	P.124
	CED LEVEL	P.124
	ECM MODE	P.124
	CODING SCHEME	P.124
	TONER EMPTY REPORT	P.125
	PROTOCOL REPORT	P.125
	GDI TIMEOUT	P.125
	ENERGY SAVE MODE	P.125

SERVICE MODE			Ref. page
2. ADJUST	PRN MAIN REGIST		P.126
	PRN SUB REGIST		P.127
	CCD MAIN ZOOM		P.128
	CCD SUB ZOOM		P.129
	CCD MAIN REGIST		P.130
	CCD SUB REGIST		P.131
	ADF SUB ZOOM		P.132
	ADF MAIN REGIST		P.132
	ADF SUB REGIST		P.133
	DMAX	Y COLOR	P.133
		M COLOR	
		C COLOR	
		K COLOR	
	1st TRANSFER VOLTAGE	Y COLOR	P.133
		M COLOR	
		C COLOR	
		K COLOR	
		K MONO	
	2nd TRANSFER VOLTAGE	PLAIN	P.133
		TRANS.	
		LABELS	
		LETTERHEAD	
		J-POSTCARD	
		THICK STOCK	
		GLOSSY	
	VPP OFFSET		P.134
	ROHS		P.134
	FLICKER SPECIAL		P.134
	SERIAL NO.		P.134
3. COUNTER	TOTAL PRINT	MONO COPY	P.135
		COLOR COPY	
		MONO PRINT	
		COLOR PRINT	
		FAX PRINT	
	TOTAL SCAN		P.135
	PRINTER JAM		P.135
	ADF JAM		P.135
	TROUBLE		P.135

SERVICE MODE				Ref. page
4. DISPLAY	MAIN F/W VER.			P.136
	ENGINE F/W VER.			P.136
	NIC F/W VER.			P.136
	MAIN RAM SIZE			P.136
	SERIAL NO.			P.136
	BB CPLD VER.			P.136
	NAND CODE VER.			P.136
5. FUNCTION	PAPER FEED TEST	TRAY1		P.137
		TRAY2 <*>		
	PRINT TEST PATTERN	TRAY1	PATTERN1	P.137
			PATTERN2	
		TRAY2 <*>	PATTERN1	
			PATTERN2	
	ADF FEED TEST			P.138
	COPY ADF GLASS AREA			P.138
	CCD MOVE TO HOME			P.138
	FAX RES. COPY TEST			P.139
	SCAN TEST			P.139
6. SOFT SWITCH				P.140
7. REPORT	SERVICE DATA LIST			P.140
	ERROR CODE LIST			P.143
	T.30 PROTOCOL LIST			P.144
8. FIXED ZOOM CHANGE	REDUCTION2			P.146
	REDUCTION1			
	EXPANSION1			
	EXPANSION2			
9. FACTORY TEST	SIGNAL TEST			P.146
	RELAY TEST			
	SENSOR TEST			
	DIAL TEST			
	VOLUME TEST			
	PANEL BUZZER TEST			
	RAM TEST			
10. CLEAR DATA	SRAM CLEAR			P.147
	MEMORY CLEAR			P.147

11.3 SERVICE'S CHOICE

11.3.1 TX SPEED

Function Use	• Transmit start speed setting. Choose the mode from among the following.
Setting/ procedure	• The default setting is V.34 33600. "V.34": "33600", 31200, 28800, 26400, 24000, 21600, 19200, 16800 V.17: 14400, 12000, 9600, 7200 V.29: 9600, 7200 V.27: 4800, 2400

11.3.2 RX SPEED

Function Use	• Reception start speed setting. Choose the mode from among the following.
Setting/ procedure	• The default setting is V.34 33600. "V.34": "33600", 31200, 28800, 26400, 24000, 21600, 19200, 16800 V.17: 14400, 12000, 9600, 7200 V.29: 9600, 7200 V.27: 4800, 2400

11.3.3 TX LEVEL

Function Use	• PSK/FSK signal output level.
Setting/ procedure	• The default setting is -9 dBm. -17 to -10 dBm "-9 dBm" -8 to -2 dBm

11.3.4 RX LEVEL

Function Use	• Reception sensitivity level.
Setting/ procedure	• The default setting is -43 dBm. -49 to -44 dBm "-43 dBm" -42 to -36 dBm

11.3.5 DTMF LEVEL

Function Use	• Dual tone output level.
Setting/ procedure	• The default setting is -9 dBm. -17 to -10 dBm "-9 dBm" -8 to -2 dBm

11.3.6 CNG LEVEL

Function Use	• Calling tone output level.
Setting/ procedure	• The default setting is -11 dBm. -17 to -12 dBm "-11 dBm" -10 to -2 dBm

11.3.7 CED LEVEL

Function Use	• Answer tone output level.
Setting/ procedure	• The default setting is -11 dBm. -17 to -12 dBm "-11 dBm" -10 to -2 dBm

11.3.8 ECM MODE

Function Use	• Select error correction mode.
Setting/ procedure	• The default setting is ON. "ON": When an error occurs during communication, re-send the frame where the error occurs. OFF: Any error is ignored during communication.

11.3.9 CODING SCHEME

Function Use	• Select compression method in TX/ RX mode.
Setting/ procedure	• The default setting is JBIG. MMR: A compression method. MR: A compression method. MH: The simplest compression method. "JBIG": The most complex compression method that generates the smallest code than any of following ones.

11.3.10 TONER EMPTY REPORT

Function Use	• Select to generate a report to a specific destination when toner empty status occurs in the engine.
Setting/ procedure	• The default setting is OFF. ON: Generate a report to report destination. "OFF": Not to generate report. • If "ON" is selected, select generate report and send to remote side when toner runs out. • Enter the telephone number for which the report is to be produced. • Fax number specifications: An up-to-20-digit number that may consist of [0-9], [*], [#], [pause], and [space]. (0-9, #, *, pause, _) • The report will generate after 20 minutes, 24 hours, 48 hours, or 72 hours after the event has occurred or until the condition is gone.

A. Toner empty report (example)

SERVICE REPORT

NAME:ABC 123
TEL:1234567
DATE: Jul 01.2006 15:12

The Fax's following conditions were appears, the machine may be can not work correctly, the Fax already send a report to your dealer automatically. They will contact with you soon.

Toner status : Empty

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11.3.11 PROTOCOL REPORT

Function Use	• Print communication report. • Choose one from among the following.
Setting/ procedure	• The default setting is OFF. "OFF": Disable T.30 communication report. ON: Print T.30 communication report. ON (ERROR): Print T.30 communication report when an error occurs.

11.3.12 GDI TIMEOUT

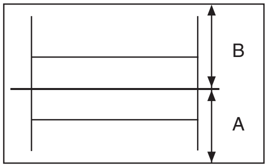
Function Use	• To specify the time for GDI time out.
Setting/ procedure	• The default setting is 6 (60 seconds). 0 (5sec) 1 (10sec) 2 (20sec) 3 (30sec) 4 (40sec) 5 (50sec) "6" (60sec)

11.3.13 ENERGY SAVE MODE

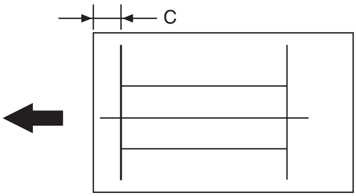
Function Use	• Set weather to activate Energy Save mode when print job receiving or panel operation have not been made for a given period.
Setting/ procedure	• The default setting is ON. "ON" OFF

11.4 ADJUST

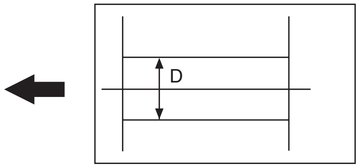
11.4.1 PRN MAIN REGIST

Function	• To vary and adjust the print start position in the main scanning direction.
Use	• If the image on the copy deviates in the main scan direction • When the PH unit has been replaced
Adjustment Specification	• Adjust the amount that widths A and B in the printed test pattern1 are shifted so that the following specification is met. • 0 ± 2.0 mm  4139F3C546DA
Adjustment Range	• -4.0 (-4.0 mm) ~ “0.0 (0.0 mm)” ~ +4.0 (+4.0 mm) • Step: 0.1 mm
Setting/ Procedure	*1.* Print the test pattern1. See P.137 *2.* Check the amount that widths A and B in the test pattern1 are shifted. If the shift is out of specification, adjust it according to the following procedure. *3.* Enter the [2. ADJUST] menu in the service mode. *4.* Select [PRN MAIN REGIST] of [2. ADJUST] and press the Menu Select key twice. *5.* Using the ▲/▼ key, change the setting value and then press the Menu Select key. *6.* Print a test pattern1 again and check it.
Adjustment Instructions	• If the width of A is less than the width of B..... Increase the setting. • If the width of B is less than the width of A..... Decrease the setting.

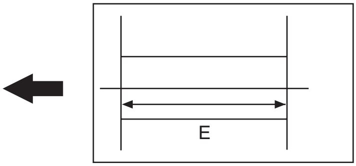
11.4.2 PRN SUB REGIST

Function	• To vary and adjust the print start position in the sub-scanning direction.
Use	• If the image on the copy deviates in the sub scan direction • When the PH unit has been replaced **NOTE** **• After the PRN MAIN REGIST adjustment has been performed**
Adjustment Specification	• Adjust the width of C in the printed test pattern1 so that the following specification is met. • 20 ± 2.5 mm  4139F3C547DA
Adjustment Range	• -6.00 (-6.00 mm) ~ "0 (0 mm)" ~ +6.00 (+6.00 mm) • Step: 0.33 mm
Setting/ Procedure	*1.* Print the test pattern1. See P.137 *2.* Check that the width of C in the test pattern1 meets the specification. If the width of C is out of specification, adjust it according to the following procedure. *3.* Enter the [2. ADJUST] menu in the service mode. *4.* Select [PRN SUB REGIST] of [2. ADJUST] and press the Menu Select key twice. *5.* Using the ▲/▼ key, change the setting value and then press the Menu Select key. *6.* Print a test pattern1 again and check it.
Adjustment Instructions	• If the width of C in the test pattern is longer than the specified width ..... Increase the setting. • If the width of C in the test pattern is shorter than the specified width ..... Decrease the setting.

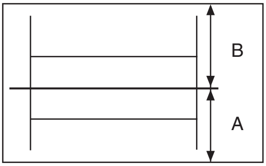
11.4.3 CCD MAIN ZOOM

Function	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning zoom ratio in the main scanning direction.
Use	• When the Scanner unit has been replaced **NOTE** • **After the [PRN MAIN REGIST] and [PRN SUB REGIST] adjustments have been performed**
Adjustment Specification	• Adjust the width of D in the copy of the test pattern1 so that the following specification is met. • 100 ± 0.5% (Zoom Ratio = Full Size:100%)  4139F3C548DA
Adjustment Range	• -2.0% ~ “0%” ~ +2.0% • Step: 0.4%
Setting/ Procedure	1. Print the test pattern1. See P.137 2. Enter the [2. ADJUST] menu in the service mode. 3. Select [CCD MAIN ZOOM] of [2. ADJUST] and press the Menu Select key. 4. Place the test pattern1 on the Original Glass and make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** 5. Check that the width of D in the copy of the test pattern1 meets the specification. Calculation: (1 - Width of D in the document ÷ Width of D in the copy) × 100 If the width of D is out of specification, adjust it according to the following procedure. 6. Press the Menu Select key. 7. Using the ▲/▼ key, change the setting value and then press the Menu Select key. 8. Place the test pattern1 on the Original Glass. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of D in the test pattern is longer than the specified width ..... Decrease the setting. • If the width of D in the test pattern is shorter than the specified width ..... Increase the setting.

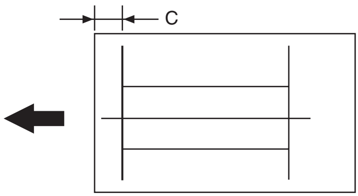
11.4.4 CCD SUB ZOOM

Function	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction.
Use	• When the Scanner unit has been replaced **NOTE** • **After the [PRN MAIN REGIST] and [PRN SUB REGIST] adjustments have been performed**
Adjustment Specification	• Adjust the width of E in the copy of the test pattern1 so that the following specification is met. • 200 ± 0.5% (Zoom Ratio = Full Size:100%)  4139F3C549DA
Adjustment Range	• -2.0% ~ “0%” ~ +2.0% • Step: 0.4%
Setting/ Procedure	1. Print the test pattern1. See P.137 2. Enter the [2. ADJUST] menu in the service mode. 3. Select [CCD SUB ZOOM] of [2. ADJUST] and press the Menu Select key. 4. Place the test pattern1 on the Original Glass and make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** 5. Check that the width of E in the copy of the test pattern1 meets the specification. Calculation: (1 - Width of E in the document ÷ Width of E in the copy) × 100 If the width of E is out of specification, adjust it according to the following procedure. 6. Press the Menu Select key. 7. Using the ▲/▼ key, change the setting value and then press the Menu Select key. 8. Place the test pattern1 on the Original Glass. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of E in the test pattern is longer than the specified width ..... Decrease the setting. • If the width of E in the test pattern is shorter than the specified width ..... Increase the setting.

11.4.5 CCD MAIN REGIST

Function	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning start position in the main scanning direction.
Use	• When the original glass is replaced. • When the Scanner unit has been replaced **NOTE** • **After the [PRN MAIN REGIST] and [PRN SUB REGIST] and [CCD MAIN ZOOM] adjustments have been performed**
Adjustment Specification	• Adjust the amount that widths A and B in the copy of the test pattern1 so that the following specification is met. • 0 ± 2.0 mm  4139F3C546DA
Adjustment Range	• -5.0 (-5.0 mm) ~ “0.0 (0.0 mm)” ~ +5.0 (+5.0 mm) • Step: 0.5 mm
Setting/ Procedure	*1.* Print the test pattern1. See P.137 *2.* Enter the [2. ADJUST] menu in the service mode. *3.* Select [CCD MAIN REGIST] of [2. ADJUST] and press the Menu Select key. *4.* Place the test pattern1 on the Original Glass and make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** *5.* Check the amount that widths A and B in the copy of the test pattern are shifted. If the shift is out of specification, adjust it according to the following procedure. *6.* Press the Menu Select key. *7.* Using the ▲/▼ key, change the setting value and then press the Menu Select key. *8.* Place the test pattern1 on the Original Glass. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of A is less than the width of B..... Increase the setting. • If the width of B is less than the width of A..... Decrease the setting.

11.4.6 CCD SUB REGIST

Function	• To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning start position in the sub-scanning direction.
Use	• When the original glass is replaced. • When the Scanner unit has been replaced **NOTE** • **After the [PRN MAIN REGIST] and [PRN SUB REGIST] and [CCD SUB ZOOM] adjustments have been performed**
Adjustment Specification	• Adjust the width of C in the copy of the test pattern1 so that the following specification is met. • 20 ± 2.5 mm  4139F3C547DA
Adjustment Range	• -5.0 (-5.0 mm) ~ “0 (0 mm)” ~ +5.0 (+5.0 mm) • Step: 0.5 mm
Setting/ Procedure	*1.* Print the test pattern1. See P.137 *2.* Enter the [2. ADJUST] menu in the service mode. *3.* Select [CCD SUB REGIST] of [2. ADJUST] and press the Menu Select key. *4.* Place the test pattern1 on the Original Glass and make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** *5.* Check that the width of C in the copy of the test pattern are shifted. If the width of C is out of specification, adjust it according to the following procedure. *6.* Press the Menu Select key. *7.* Using the ▲/▼ key, change the setting value and then press the Menu Select key. *8.* Place the test pattern1 on the Original Glass. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of C in the test pattern is longer than the specified width ..... Increase the setting. • If the width of C in the test pattern is shorter than the specified width ..... Decrease the setting.

11.4.7 ADF SUB ZOOM

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** • **After the [PRN MAIN REGIST] and [PRN SUB REGIST] and [CCD SUB ZOOM] adjustments have been performed**
Adjustment Range	See P.17 of the Auto Document Feeder Unit service manual.
Setting/ Procedure	
Adjustment Instructions	

11.4.8 ADF MAIN REGIST

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the main scanning direction when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** • **After the [PRN MAIN REGIST] and [PRN SUB REGIST] and [CCD SUB ZOOM] adjustments have been performed** • **After the [ADF SUB ZOOM] adjustments have been performed**
Adjustment Range	See P.18 of the Auto Document Feeder Unit service manual.
Setting/ Procedure	
Adjustment Instructions	

11.4.9 ADF SUB REGIST

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the sub-scanning direction when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** **• After the [PRN MAIN REGIST] and [PRN SUB REGIST] and [CCD SUB ZOOM] adjustments have been performed** **• After the [ADF SUB ZOOM] adjustments have been performed**
Adjustment Range	See P.19 of the Auto Document Feeder Unit service manual.
Setting/ Procedure	
Adjustment Instructions	

11.4.10 DMAX

Function	• To adjust density of each color.
Setting/ procedure	• The default setting is 0%. • Adjustment range: -1.6% -0.8% "0%" +0.8% +1.6%

11.4.11 1st TRANSFER VOLTAGE

Function	• To adjust the voltage applied to the transfer roller for each color.
Use	• When adjusting density of each color
Setting/ procedure	• The default setting is 0V. • Adjustment range: -500V ~ +500V • Step: 50V

11.4.12 2nd TRANSFER VOLTAGE

Function	• Adjusts image characteristics according to user requirements for each type of media by varying the second transfer voltage.
Use	• To adjust the second transfer voltage when an image problem (void areas, white spots) occurs due to the characteristics of the type of media being used. • If white spots occur, decrease the 2nd transfer voltage (adjust in the minus direction). • If void areas occurs, increase the 2nd transfer voltage (adjust in the plus direction).
Setting/ procedure	• The default setting is 0V. • Adjustment range: -1500V ~ +1500V • Step: 100V • Types of paper to be adjusted PLAIN TRANS. LABELS LETTERHEAD J-POSTCARD THICK STOCK GLOSSY

11.4.13 VPP OFFSET

Function	• Optimizes the image by varying the output value of the developing bias when an image problem occurs due to the atmospheric pressure at high altitudes.
Use	• To adjust the developing when an image problem (uneven density) occurs in an environment of low atmospheric pressure in places such as at high altitudes.
Setting/ procedure	• The default setting is STEP0. • Adjustment range: "STEP0 (0V)" STEP1 (-100V) STEP2 (-200V) STEP3 (-300V)

11.4.14 ROHS

Function	• Sets supportability of the temperature/humidity sensor (TEM/HUMS) for RoHS.
Use	• When the temperature/humidity sensor has been replaced with a new one.
Setting/ procedure	• The default setting is OFF. ON (Sensor not supporting RoHS) "OFF (Sensor supporting RoHS)"

11.4.15 FLICKER SPECIAL

Function	• Eliminates flickers of a room fluorescent light when it occurs due to power source use environment or similar reason.
Use	• Use when the fluorescent light flickers due to power source use environment or similar reason.
Setting/ procedure	• The default setting is OFF. ON "OFF"

11.4.16 SERIAL NO.

Function	• Input machine serial number, 8 digits, range from 00000001 to 99999999. • Once the serial number is specified, [SERIAL NO.] on the [2. ADJUST] menu cannot be set again.
Use	

11.5 COUNTER

11.5.1 TOTAL PRINT

A. MONO COPY

Function	• Displays the number of monochrome copies made.
Use	• When checking the number of monochrome copies made

B. COLOR COPY

Function	• Displays the number of color copies made.
Use	• When checking the number of color copies made

C. MONO PRINT

Function	• Displays the number of monochrome printed pages produced.
Use	• When checking the number of monochrome printed pages produced

D. COLOR PRINT

Function	• Displays the number of color printed pages produced.
Use	• When checking the number of color printed pages produced

E. FAX PRINT

Function	• Displays the number of FAX printed pages produced.
Use	• When checking the number of FAX printed pages produced

11.5.2 TOTAL SCAN

Function	• Display the number of scans made.
Use	• When checking the number of scans made

11.5.3 PRINTER JAM

Function	• Displays the number of misfeeds that have occurred.
Use	• When checking for the number of misfeeds that have occurred

11.5.4 ADF JAM

Function	• Displays the number of misfeeds that have occurred in the Auto Document Feeder Unit.
Use	• When checking for the number of misfeeds that have occurred in the Auto Document Feeder Unit

11.5.5 TROUBLE

Function	• Displays the number of malfunctions detected.
Use	• When checking for the number of malfunctions detected

11.6 DISPLAY

11.6.1 MAIN F/W VER.

Function	• Displays the version of the controller firmware.
Use	• When upgrading the firmware • When the image processing board has been replaced with a new one

11.6.2 ENGINE F/W VER.

Function	• Displays the version of the engine firmware.
Use	• When the printer control board has been replaced with a new one

11.6.3 NIC F/W VER.

Function	• Displays the version of the NIC firmware.
Use	

11.6.4 MAIN RAM SIZE

Function	• Displays the size of the main memory.
Use	• When checking for the memory size

11.6.5 SERIAL NO.

Function	• Displays the serial number of the printer engine.
Use	• When checking for the printer serial number

11.6.6 BB CPLD VER.

Function	• Displays the version of the BB CPLD version.
Use	• When checking for the BB CPLD version.

11.6.7 NAND CODE VER.

Function	• Displays the version of the NAND flash code version.
Use	• When checking for the NAND flash code version.

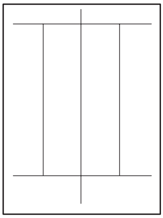
11.7 FUNCTION

11.7.1 PAPER FEED TEST

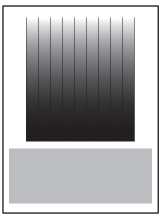
Function	• To check the paper feeding in the paper take-up/transport sections without printing on the paper.
Use	• When a paper misfeed occurs
Setting/ procedure	*1.* Select the paper tray. *2.* Press the Start key to begin testing paper feeding. *3.* Press the Stop key to stop testing paper feeding. **NOTE** **• It cannot be operated at the time of warming up.** **• Don't count.**

11.7.2 PRINT TEST PATTERN

A. PATTERN1

Function	• To print the test pattern for adjusting the image.
Use	• If there is tilt or when registration or zoom ratio adjustments are performed
Setting/ procedure	*1.* Select the paper tray. *2.* Select the [PATTERN1]. *3.* Press the B&W start key to print the test pattern.  4139F3C550DA

B. PATTERN2

Function	• To print the test pattern for halftones and gradations.
Use	• When checking density and pitch irregularities • When checking reproducibility of gradations
Setting/ procedure	*1.* Select the paper tray. *2.* Select the [PATTERN2]. *3.* Press the B&W start key to print the test pattern.  4139F3C551DA

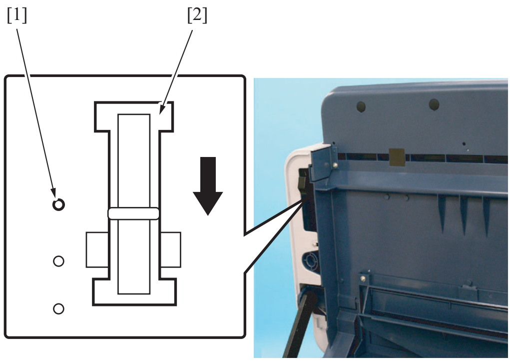
11.7.3 ADF FEED TEST

Function	• To check the paper feeding in the paper take-up/transport sections in the Automatic Document Feeder.
Use	• When a document misfeed occurs
Setting/ procedure	1. Load paper into the Automatic Document Feeder. 2. Press the Start key to begin testing paper feeding. 3. Press the Stop key to stop testing paper feeding.

11.7.4 COPY ADF GLASS AREA

Function	• To check for dirt in the scanning section of the Automatic Document Feeder.
Use	• If spots appear in the copies
Setting/ procedure	1. Load A4S or LetterS paper into Tray1. 2. Press the Start key to start the [COPY ADF GLASS AREA] function. 3. Two copy samples are fed out. 4. Check that no spots appear in the copy samples. 5. Press the Stop key to stop the [COPY ADF GLASS AREA] function.

11.7.5 CCD MOVE TO HOME

Function	• Moves the scanner unit to its home position for locking.
Use	• When transporting the machine
Setting/ procedure	1. Enter the user service mode. 2. Select [CCD MOVE TO HOME] and press the Menu Select key. 3. The scanner unit moves to the home position when the start key is pressed. 4. Turn OFF the machine's main switch. 5. Open the IR unit. Then, inserting a pin or similar object into the hole at portion [1], lower the lock lever [2].  4139F3C525DA **NOTE** • **After the transportation of the machine, make sure to unlock the scanner unit by raising the lock lever [2] before turning on the machine's main switch.**

11.7.6 FAX RES. COPY TEST

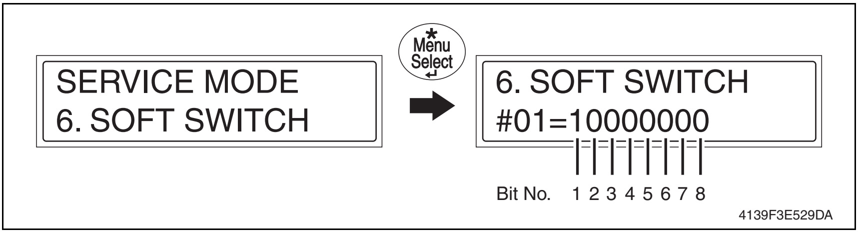
Function	• Fax resolution copy test
Use	• To check whether the encoding/ decoding process is correct
Setting/ procedure	• The paper source is fixed to Tray1. (Tray cannot be changed.) • When A4 or Letter is not loaded in Tray1, operation of printing is not performed.

11.7.7 SCAN TEST

Function	• To check the lighting of the Exposure Lamp and the movement of the scanner.
Use	• If the scanner malfunctions
Setting/ procedure	*1.* Press the Start key to begin the scanner test. *2.* Press the Stop key to stop the scanner test.

11.8 SOFT SWITCH

- Refer to the chapter of soft switch for the explanation of soft switch.
  See P.148



11.8.1 KEY DEFINITION FOR SOFT SWITCH

Key	Definition
▼	Soft Switch Number Forward.
▲	Soft Switch Number Backward.
▶	Bit No. Forward.
◀	Bit No. Backward.
1 or 0	Bit No. is changed.
Menu Select	The setting value of Soft Switch Number is defined.

11.9 REPORT

11.9.1 SERVICE DATA LIST

Function	• Print service data list report and Error log history list.
Use	Service Data list includes the following items: • SOFT SWITCH • COMMUNICATION HISTORY & COUNTER • ADJUST • RX IN MEMORY • MAIN RAM SIZE • ROM ID Error log history list includes the following items: • Index: Index number from 0 - 9999 • Error: Error code number • Maker: NSF frame maker code • Tell.: Remote side or TX side telephone number for that transaction
Setting/ procedure	*1.* Enter the [SERVICE MODE]. *2.* Select [REPORT] and press the Menu Select key. *3.* Select [SERVICE DATA LIST] and press the Menu Select key.

(1) SERVICE DATA LIST (example)

SERVICE DATA LIST

NAME :
TEL :
DATE :JUN. 05. 2006 13:58

--SOFT SWITCH –

SW01-SW16	00	20	80	0C	00	00	07	61	00	81	00	80	10	00	01	03
SW17-SW32	00	00	68	00	80	06	00	00	00	28	00	A7	14	68	00	00
SW33-SW48	C0	82	10	8A	00	C1	00	08	00	00	00	04	00	06	00	89
SW49-SW64	01	00	00	00	00	B0	00	00	00	00	00	21	0F	00	80	10

--COMMUNICATION HISTORY & COUNTER –

000001: ECM RX TIME	000000: ECM TX TIME
000008: G3 RX TIME	000000: G3 RX PAGE
000000: V.17 14.4K	000000: V.17 12K
000000: V.17 9.6K	000000: V.17 7.2K
000000: V.29 9.6K	000000: V.29 7.2K
000000: V.27 4.8K	000001: V.27 2.4K
000001: G3 TX TIME	000000: G3 TX PAGE
000000: V.17 14.4K	000000: V.17 12K
000000: V.17 9.6K	000000: V.17 7.2K
000000: V.29 9.6K	000000: V.29 7.2K
000000: V.27 4.8K	000000: V.27 2.4K
000027: V.34 RX TIME	000007: V.34 RX PAGE
000002: 33.6K	000005: 31.2K
000000: 28.8K	000000: 26.4K
000000: 24.0K	000000: 21.6K
000000: 19.2K	000000: 16.8K
000000: 9.6K	000000: 7.2K
000000: 4.8K	000000: 2.4K
000000: V.34 TX TIME	000015: V.34 TX PAGE
000000: 33.6K	000006: 31.2K
000000: 28.8K	000000: 26.4K
000000: 24.0K	000000: 21.6K
000000: 19.2K	000000: 16.8K
000000: 9.6K	000000: 7.2K
000000: 4.8K	000000: 2.4K
000007: JBIG TX TIME	000007: JBIG RX TIME
000000: TOTAL COUNTER	
000849: COPY PRINT	000000: FAX PRINT
000127: REPORT PRINT	000000: PC PRINT

-- ADJUST --

PRN MAIN REGIST : +0.4	PRN SUB REGIST :
CCD MAIN ZOOM : 0	CCD SUB ZOOM : 0
CCD MAIN REGIST : +1.0	CCD SUB REGIST : -1.0
ADF MAIN REGIST : +1.0	ADF SUB ZOOM : 0
ADF SUB REGIST : -2.0	

RX IN MEMORY :
MAIN RAM SIZE : 128MB

-- ROM ID --
2006/06/05 V0.38

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(2) ERROR LOG HISTORY LIST (example)

- The following table is the error log history. The table keeps the last 40 records only.

ERROR LOG HISTORY LIST

Index	Error	Maker	Tele.
0001	:00A0	4230	88634733507
0002	:00A0	49EE	
0003	:0070	0000	
0004	:0070	0000	
0005	:0070	0000	
0006	:0070	0000	
0007	:0070	0000	
0008	:0070	0000	
0009	:0070	0000	123

Maker: NSF signal 3rd. and 4th byte

Tele.: Keep 20 digits of TSI or CSI

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11.9.2 ERROR CODE LIST

Function / Use	• Print error code (CODE) and error occurrence time (ERROR TIMES).
Setting/ procedure	*1.* Enter the [SERVICE MODE]. *2.* Select [REPORT] and press the Menu Select key. *3.* Select [ERROR CODE LIST] and press the Menu Select key.

(1) ERROR CODE TABLE (example)

ERROR CODE TABLE

CODE	ERROR TIMES	CODE	ERROR TIMES	CODE	ERROR TIMES
0001	00000000	0002	00000000	0003	00000000
0004	00000000	0005	00000000	0006	00000000
0007	00000000	0008	00000000	0009	00000000
000A	00000000	000B	00000000	000C	00000000
000D	00000000	000E	00000000	000F	00000000
0010	00000000	0011	00000000	0012	00000000
0013	00000000	0014	00000000	0015	00000000
0016	00000000	0017	00000000	0018	00000000
0019	00000000	001A	00000000	001B	00000000
001C	00000000	001D	00000000	001E	00000000
001F	00000000	0020	00000000	0021	00000000
0022	00000000	0023	00000000	0024	00000000
0025	00000000	0026	00000000	0027	00000000
0028	00000000	0029	00000000	002A	00000000
002B	00000000	002C	00000000	002D	00000000
002E	00000000	002F	00000000	0030	00000000
0031	00000000	0032	00000000	0033	00000000
0034	00000000	0035	00000000	0036	00000000
0037	00000000	0038	00000000	0039	00000000
003A	00000000	003B	00000000	003C	00000000
003D	00000000	003E	00000000	003F	00000000
0040	00000000	0041	00000000	0042	00000000
0043	00000000	0044	00000000	0045	00000000
0046	00000000	0047	00000000	0048	00000000
0049	00000000	004A	00000000	004B	00000000
004C	00000000	004D	00000000	004E	00000000
004F	00000000	0050	00000000	0051	00000000
0052	00000000	0053	00000000	0054	00000000
0055	00000000	0056	00000000	0057	00000000
0058	00000000	0059	00000000	005A	00000000
005B	00000000	005C	00000000	005D	00000000
005E	00000000	005F	00000000	0060	00000000
0061	00000000	0062	00000000	0063	00000000
0064	00000000	0065	00000000	0066	00000000
0067	00000000	0068	00000000	0069	00000000
006A	00000000	006B	00000000	006C	00000000
006D	00000000	006E	00000000	006F	00000000
0070	00000002	0071	00000000	0072	00000008
0073	00000000	0074	00000000	0075	00000000
0076	00000000	0077	00000000	0078	00000017
0079	00000000	007A	00000000	007B	00000000
007C	00000000	007D	00000000	007E	00000000
007F	00000000	0080	00000000	0081	00000000
0082	00000000	0083	00000001	0084	00000000
0085	00000000	0086	00000000	0087	00000000
0088	00000000	0089	00000000	008A	00000000
008B	00000000	008C	00000000	008D	00000000
008E	00000000	008F	00000000	0090	00000000
0091	00000001	0092	00000000	0093	00000000
0094	00000000	0095	00000000	0096	00000000
0097	00000000	0098	00000000	0099	00000000
009A	00000000	009B	00000000	009C	00000000
009D	00000000	009E	00000000	009F	00000000
00A0	00000024	00A1	00000000	00A2	00000000
00A3	00004558	00A4	00000002	00A5	00000000
00A6	00000000	00A7	00000006	00A8	00000000
00A9	00000001	00AA	00000000	00AB	00000000
00AC	00000000	00AD	00000000	00AE	00000000
00AF	00000000	00B0	00000000	00B1	00000000
00B2	00000000	00B3	00000000	00B4	00000000
00B5	00000000	00B6	00000000	00B7	00000000
00B8	00000000	00B9	00000000	00BA	00000000
00BB	00000000	00BC	00000000	00BD	00000000
00BE	00000000	00BF	00000000	00C0	00000000
00C1	00000000	00C2	00000000	00C3	00000000
00C4	00000000	00C5	00000000	00C6	00000000
00C7	00000000	00C8	00000000	00C9	00000000
00CA	00000000	00CB	00000000	00CC	00000000
00CD	00000000	00CE	00000000	00CF	00000000
00D0	00000000	00D1	00000000	00D2	00000000
00D3	00000000	00D4	00000000	00D5	00000000
00D6	00000000	00D7	00000000	00D8	00000000
00D9	00000000	00DA	00000000	00DB	00000000
00DC	00000000	00DD	00000000	00DE	00000000
00DF	00000000	00E0	00000000	00E1	00000000
00E2	00000000	00E3	00000000	00E4	00000000
00E5	00000000	00E6	00000000	00E7	00000000
00E8	00000000	00E9	00000000	00EA	00000000
00EB	00000000	00EC	00000000	00ED	00000000
00EE	00000000	00EF	00000000	00F0	00000000
00F1	00000000	00F2	00000000	00F3	00000000
00F4	00000000	00F5	00000000	00F6	00000000
00F7	00000000	00F8	00000000	00F9	00000000
00FA	00000000	00FB	00000000	00FC	00000000
00FD	00000000	00FE	00000006	00FF	00000002

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11.9.3 T.30 PROTOCOL LIST

Function	Print out T.30 or V8 protocol after communication.
Use	• SESSION: Session number • FUNCTION: Function Name • DESTINATION STATION: Destination Name/Tel. No. • DATE/TIME: Communication Date & Time • PAGE: Total page number for this session • MODE: Communication speed and ECM mode • RESULT: Communication result • TX: T.30 command sent by local Fax • RX: T.30 command received from remote Fax • DATA: T.30 frame that include address & control & Data
Setting/ procedure	1. Enter the [SERVICE MODE]. 2. Select [REPORT] and press the Menu Select key. 3. Select [T.30 PROTOCOL LIST] and press the Menu Select key.

(1) V.17 Communication (example)

PROTOCOL MONITOR REPORT

NAME:TMFP
TEL :886 3 4733507
DATE:JUN.10.2006 12:10

SESSION	FUNCTION	NO.	DESTINATION STATION	DATE	TIME	PAGE	DURATION	MODE	RESULT
0001	TX	001	ABC 22345678901234567890	OCT.27	17:19	008	00h00min03s	ECM -12	OK

TX	RX	DATA
NSF		FF 03 20 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
CSI		FF 03 40 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
DIS		FF 13 00 00 00 00 00
	NSS	FF 03 00 00 00 00 00 00 00 00 00 00 00
	DCS	FF 13 00 00 00 00 00 00 00 00 00
	TCF	00 00 00 00 00 00 00 00 00 00 00
CFR		FF 13 84
	PIX	
	EOP	FF 13 BF 2F 00 00 41
MCG		FF 13 8C
	DCN	FF 13 FB

TRAINING PHASE (TCF)

DATA PHASE (PIX)

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(2) V.34 Communication (example)

PROTOCOL MONITOR REPORT

NAME:TMFP
TEL :886 3 4733507
DATE:JUN.10.2006 12:10

SESSION	FUNCTION	NO.	DESTINATION STATION	DATE	TIME	PAGE	DURATION	MODE	RESULT
0001	TX	001	ABC 22345678901234567890	OCT.27	17:19	008	00h00min03s	ECM -12	OK

TX	RX	DATA
ANS		
	CM	
JIM		
	CJ	
NSF	NSS	FF 03 20 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
CSI	DCS	FF 03 40 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
DIS	TCF	FF 13 80 00 00 00 00 00
		FF 03 20 00 00 00 00 00 00 00 00 00 00
	PIX	FF 13 83 00 00 00 00 00 00 00 00 00
	EOP	
CFR		FF 13 84
	DCN	
		FF 13 BF 2F 00 00 41
MCF		FF 13 8C
		FF 13 FB

V.8 PROTOCOL DUMP (CJ)

TRAINING PHASE (TCF)

DATA PHASE (PIX)

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11.10 FIXED ZOOM CHANGE

Function Use	• The fixed zoom ratios can be changed.
Setting/ procedure	*1.* Enter the [SERVICE MODE]. *2.* Select [FIXED ZOOM CHANGE] and press the Menu Select key. *3.* Select the fixed zoom ratio that you wish to change and press the Menu Select key. *4.* Use the 10-Key Pad to type in the desired fixed zoom ratio.

- Default fixed zoom ratios and setting ranges according to marketing area

<Metric>

Setting name	Initial fixed zoom ratio	Setting range
REDUCTION2	70%	51% to 70%
REDUCTION1	81%	71% to 99%
EXPANSION1	115%	101% to 140%
EXPANSION2	141%	141% to 199%

<Inch>

Setting name	Initial fixed zoom ratio	Setting range
REDUCTION2	64%	51% to 64%
REDUCTION1	78%	65% to 99%
EXPANSION1	129%	101% to 153%
EXPANSION2	154%	154% to 199%

11.11 FACTORY TEST

- This test is for factory adjustment only and should NOT be used.

	Functions/Use
SIGNAL TEST	• This test is for factory adjustment only and should NOT be used.
RELAY TEST	• This test is for factory adjustment only and should NOT be used.
SENSOR TEST	• This test is for factory adjustment only and should NOT be used.
DIAL TEST	• This test is for factory adjustment only and should NOT be used.
VOLUME TEST	• To check the volume of the speaker.
PANEL BUZZER TEST	• To check the operation of the display and all indicators and buttons. • When the panel buzzer test are finish, press the panel reset key twice.
RAM TEST	• To test reading and writing of the memory.

11.12 CLEAR DATA

11.12.1 SRAM CLEAR

Function	To clear the settings for the functions listed at the right and return the functions to their default settings.
Use	The following items are cleared (initialization). • Menu mode (Except for [USER SETTING] - [DATE&TIME] that keeps its setting value): • Only [FAX MAINTENANCE] of the user service mode: Set to default • Only [TX/RX Result] of the Display mode: Clear • Only [SERVICE'S CHOICE] and [SOFT SWITCH] of the Service mode: Set to default
Setting/ procedure	**NOTE** **• Before executing [SRAM CLEAR], be sure to record the setting values that are to be initialized through [SRAM CLEAR].** **• For the record of the setting values, it is a good idea to have reports and lists printed.** **• Some setting values are not included any of these reports or lists. Be sure to make a note of them separately.** **• After [SRAM CLEAR] has been executed, make necessary entries of data again based on the setting values recorded.**

11.12.2 MEMORY CLEAR

Function	To clear the settings for the functions listed at the right and return the functions to their default settings.
Use	The following items are cleared (initialization). • Only [SERVICE'S CHOICE] and [FIXED ZOOM CHANGE] of the Service mode: Set to default
Setting/ procedure	**NOTE** **• Before executing [MEMORY CLEAR], be sure to record the setting values that are to be initialized through [MEMORY CLEAR].** **• For the record of the setting values, it is a good idea to have reports and lists printed.** **• Some setting values are not included any of these reports or lists. Be sure to make a note of them separately.** **• After [MEMORY CLEAR] has been executed, make necessary entries of data again based on the setting values recorded.**

12. SOFT SWITCH set

12.1 Description

This machine is equipped with totally 64 soft switches that are used for fax adjustment in order to conform to the standard of each country.
The default setting is changeable.

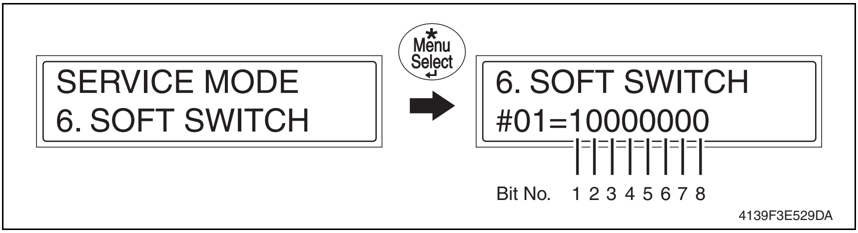
The default setting of soft switch is automatically changed according to the following settings.

- The marketing area is set in procedures of [USER SETTING] → [FAX PTT SETTING].
- The marketing area is set at [Fax PTT Setting:] by using LSU utility software.
- When the setting is made in the procedures of [SERVICE MODE] → [CLEAR DATA] → [SRAM CLEAR], the default setting is defined according to the current setting of marketing area.

Bit No. can be changed with the following way.

- [SOFT SWITCH] of [SERVICE MODE].

See P.140



Hex-binary conversion list		HEX															
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Bit No.	4 (8)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	3 (7)	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
	2 (6)	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
	1 (5)	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1

12.2 Default setting

12.2.1 Country for each marketing area

NOTE

- **A different country may be applicable depending on the communications standard.**
- **The marketing area settings is set in the procedure of [USER SETTING] → [FAX PTT SETTING].**

See P.101

12.2.2 Soft switch list

Soft Switch No.	Bit No.	Designation	Page No.
#01	2/1	V.34 CI signal byte number	P.175
#02	8/7	Time between phase C to phase D signal in V.17	P.176
	6	Header TX selection open to user	
	3/2	Transmit MCF signal level criteria	
	1	Sent N.G page	
#03	8	Send out NSF frame with station ID	P.177
	7	Number of Pause within phone number	
	6	Re-dial prohibit for NO ANSWER	
	4/3/2/1	RX level setting	
#04	4	Visible alarm for RTN signal	P.178
	3	Audible alarm for RTN signal	
	1	Polarity change detection	
#05	8/7	Push Button ON/OFF Timing (PB)	P.179
	6/5	Relation between 10 key # & No.of dial pulse	
	4/3/2/1	Dial pulse make ratio select adjust (MR)	
#06	8/7	Ring on time to ignore ring off time at 1st cycle	P.180
	4/3	Ring off time at 1st. cycle to approve incoming ring	
	2/1	Pulse cycle to approve ring frequency	
#07	8	Dial tone or busy tone detection	P.181
	7	PSTN/PBX setting	
	6	PBX dial tone detect	
	5	Dial mode select	
	4/3/2/1	TX Level select for PSK/FSK	
#08	8	Sending RTN signal level	P.182
	7	Detect busy tone after dialing	
	6	Sending CED signal after connection	
	4/3/2/1	Re-dial interval	
#09	8/7	Ringer frequency detection	P.183
	5	TSI/CSI append “+”	
	2/1	Time from RX DIS signal to send DCS signal	
#10	8	Print out RTN page report	P.184
	7	Confirmation report result field	
	6/5	Get gap time between digit for pulse dial	
	4	RX PIP T.30 command after send out MPS command	
	3	Received DIS signal within reception	
	2	Transmission time limitation	
	1	Audio alarm after communication fail	
#11	7	Detect dial tone after pre-fix number	P.185
	6	Pulse dial allowed to select	
	5	Protocol signal Display mode	
	1	DTMF high frequency dB value	

Soft Switch No.	Bit No.	Designation	Page No.
#12	8	ECM mode capability	P.185
	7/6	V.34 fall back counter for V.34 TX	
	5	Send CTC after 4th PPR	
	3	Send EOR after lowest speed	
	2/1	TCF transmission timing after DCS signal	
#13	8	MR capability for G3	P.186
	7/6	Delay time between transaction	
	5	Super fine printing capability for receiving	
	4	Disable ultra fine capability in RX mode	
	3	DTS mode	
	2	Send DTC signal if RX DIS signal in polling RX mode (no function on G4)	
#14	6	Memory size level To RX	P.187
	3/2/1	Time between V.34 ANSam signal and FSK DIS signal	
#15	8	IPSEL1	P.187
	7	DCSEL	
	6	DCLIM	
#16	2/1	Fax communication coding method	P.188
#17	6	CED frequency	P.188
	5/4/3	Pause between off hook and CED signal	
	2/1	Inactivity timer [T5]	
#18	6/5	G3 mode training quality level	P.189
	4/3/2/1	Redefine re-dial attempts counter	
#19	8/7/6/5	CNG signal level	P.190
	4/3/2/1	DTMF high frequency level	
#20	5/4/3/2/1	Re-dial interval	P.191
#21	8	NSS signal before DCS	P.192
	7/6	CNG sending duration after dialing	
	5	T4 timer	
	3	DIS signal length	
	2/1	Increase default T1 Timing during calling (Only for TX function)	
#22	8	Detect busy tone before dial	P.193
	7	Regard dial tone as busy tone after dialing	
	6	Check Busy tone method	
	4/3/2/1	CED signal output level	
#23	—	Reserved	P.193
#24	—	Reserved	P.194
#25	4/3	Flash key time in ON hook key dial	P.194
#26	8/7	Dial tone detection time before disconnected	P.195
	6/5/4/3/2/1	Dial tone Insensitivity (0 to -40 dBm)	
#27	4/3/2/1	Immunity for Dial Tone receiver	P.196

Soft Switch No.	Bit No.	Designation	Page No.
#28	8/7/6/5	Time to dial after dial tone on the line	P.197
	4/3/2/1	CED duration time within calling period	
#29	5/4/3/2/1	Time To Dial after seize the line when dial tone detection	P.198
#30	8/7	Pause Delay Time Within Digits	P.199
	6/5/4/3/2/1	Signal tone Insensitivity (dBm) after Dial for busy tone	
#31	—	Reserved	P.200
#32	—	Reserved	P.200
#33	7	V.17 Echo protection tone	P.201
	6	V.29 Echo protection tone	
	5	Compromise equalize enable (CEQ) in the transmit path (TCEQ)	
	4	Compromise equalize enable (CEQ) in the receiver path (RCEQ)	
#34	2	Password capability in DIS/DTC frame	P.201
#35	8/7	Dial tone table switch time	P.202
	6/5/4	Dial tone frequency upper range index	
	3/2/1	Dial tone frequency low range index	
#36	8	Re-dial attempts continue fail counter (Using for detect line problem error)	P.203
	4/3/2/1	Re-dial attempts fail limitation counter (Using for detect line problem error)	
#37	8	Polling TX type for V.34 modem	P.204
	7	Auto dial learning for V.34 modem	
	6/5/4	RX start symbol rate for V.34 modem	
	3/2/1	TX start symbol rate for V.34 modem	
#38	8	Fine tune of 33.6 kbps/ 31.2 kbps receiving speed for V.34 modem	P.205
	7	Set/Reset V.34 transmit level deviation	
	6/5	V.34 flag number between ECM frame	
	4	Phase 2 guard tone power level (V.34)	
	1	V.8 /V.34 capability	
#39	8	Disable V.34 TX for V.34 modem	P.206
	7	Disable V.34 RX for V.34 modem	
	6/5	Flags number in FSK frame for V.34 modem	
	4	Manual TX mode for V.34 modem	
	3	Switch from V.17 to V.34 if DIS Bit 6 set after received DIS	
	2/1	Delay time in primary channel for V.34 transmit after CFR or MCF signal	
#40	8/7/6/5	V.17 RX start speed select receiving start speed for V.17	P.207
	3/2/1	V.34 RX start speed prohibit V.34 mode When upper speed less	
#41	8/7/6/5	V.17 TX start speed select receiving start speed for V.17	P.208
	3/2/1	V.34 TX start speed prohibit V.34 mode when upper speed less	
#42	—	Reserved	P.209
#43	—	Reserved	P.209

Soft Switch No.	Bit No.	Designation	Page No.
#44	—	Reserved	P.209
#45	6	Close network	P.210
#46	8	Daylight savings timer	P.210
	4	RX print mode	
	3	Default TX mode	
	2	Header for FAX TX	
	1	Print model name on top of TX page if name not register	
#47	6	RX mode	P.211
	5	Footer	
#48	8	Activity report	P.211
	7/6	TX Result Report	
	5/4	RX Result Report	
	3	Error report for I-FAX and Network scanner	
	2	If machine receive error Mail (I-FAX), the mail is deleted or kept?	
#49	6	Print RX Mailbox Report method	P.212
	5	Re-dial method if Comm. Fail	
	4/3/2/1	No. of rings	
#50	8	Transmit or cancel after time out in “Memory TX”	P.212
#51	4/3	T30 monitor report selection	P.213
	2	Send unsent page mode for memory transmission	
#52	—	Reserved	P.213
#53	—	Reserved	P.214
#54	8	Report Date/Time type	P.214
	7/6	Report Date/Time format	
	5/4	Memory near full capacity for B/W scanning	
	3/2	Memory near full capacity for Color/Gray scanning	
#55	—	Reserved	P.215
#56	—	Reserved	P.215
#57	—	Reserved	P.215
#58	8	Time out from PSK to FSK delay time	P.216
#59	6/5/4/3/2/1	Time Between GMT (Greenwich Mean Time)	P.217
#60	3	Print Mailbox RX image even password are not correct	P.220
	2	Off hook alarm after communication	
	1	Display destination selection within TX phase C	
#61	4/3/2/1	Max. No. of ring	P.220
#62	—	Reserved	P.221
#63	8	"#" key definition in PBX mode	P.221
	1	TX Result report with image	
#64	6	Print RX error report In RX side if no any FAX signal detected	P.222
	5	10 PPS & 20 PPS Selectable by User	

12.2.3 Default soft switch setting for each market area

A. Market area 1

Soft Switch No.	Marketing area																															
	U.S.A								United Kingdom								Argentina								Australia							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	0	0	1	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	1	1
#06	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	0	0	0	0	1	0
#07	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
#08	1	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	1	1	1
#09	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
#10	1	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1	1	1	1	1	0	1	0	1
#11	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#19	0	0	0	1	0	1	1	0	1	1	0	1	0	1	1	0	**1**	**1**	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	1
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Soft Switch No.	Marketing area																															
	U.S.A								United Kingdom								Argentina								Australia							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#38	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

B. Market area 2

Soft Switch No.	Marketing area																															
	Austria								Belgium								Brazil								Canada							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
#03	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	1	0	0	1	1	0	1	0	1	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0
#06	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
#08	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#10	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1
#11	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#19	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1

Soft Switch No.	Marketing area																															
	Austria								Belgium								Brazil								Canada							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	1
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

C. Market area 3

Soft Switch No.	Marketing area																															
	China								Czech								Denmark								Europe							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	1	0	0	1	0	0	1	1	0	1	0	1	0	0	1	1	0	1	0	1	0	0	1	1	0	1	0	1	0	0	1	1
#06	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
#08	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#10	1	1	1	1	0	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1
#11	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#12	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#19	0	0	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1

Soft Switch No.	Marketing area																															
	China								Czech								Denmark								Europe							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

D. Market area 4

Soft Switch No.	Marketing area																															
	Finland								France								Germany								Greece							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	1	0	0	1	1	0	1	0	1	0	0	1	1	0	1	0	1	0	0	1	1	0	1	0	1	0	0	1	1
#06	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
#08	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#10	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1
#11	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#19	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1

Soft Switch No.	Marketing area																															
	Finland								France								Germany								Greece							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

E. Market area 5

Soft Switch No.	Marketing area																															
	Hong Kong								Hungary								Ireland								Israel							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	0	0	1	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	1	0	0	1	1	0	1	0	1	0	0	0	0
#06	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0
#07	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
#08	1	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	0
#09	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
#10	1	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1
#11	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#19	0	1	1	0	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#35	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1

Soft Switch No.	Marketing area																															
	Hong Kong								Hungary								Ireland								Israel							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

F. Market area 6

Soft Switch No.	Marketing area																															
	Italy								Japan								Korea								Malaysia							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
#06	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	0
#08	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	0	0	0	0	1	1	0
#09	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#10	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1
#11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#19	1	1	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1

Soft Switch No.	Marketing area																															
	Italy								Japan								Korea								Malaysia							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	0
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

G. Market area 7

Soft Switch No.	Marketing area																															
	Mexico								Netherlands								New Zealand								Norway							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	1	0	1	1	1	0	1	0	1	0	0	1	1
#06	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	0	0	0	0	1	0	1	1	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	1	1	0	0	0	0	1	0	0	0	1	0	0	0	1
#08	1	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
#09	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#10	1	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1
#11	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#19	0	0	0	1	0	1	1	0	1	1	0	1	0	1	1	0	0	0	0	1	0	1	1	0	1	1	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#35	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1

Soft Switch No.	Marketing area																															
	Mexico								Netherlands								New Zealand								Norway							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

H. Market area 8

Soft Switch No.	Marketing area																															
	Philippines								Poland								Portugal								Russia							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	1	0	0	1	1	0	1	0	1	0	0	0	0
#06	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
#08	1	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	0
#09	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
#10	1	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1
#11	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#19	0	0	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#35	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1

Soft Switch No.	Marketing area																															
	Philippines								Poland								Portugal								Russia							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

I. Market area 9

Soft Switch No.	Marketing area																															
	Saudi Arabia								Singapore								Slovakia								South Africa							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	1	0	0	1	1	1	0	0	1	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0
#06	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	0
#08	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	0
#09	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
#10	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	0	0	0	1	1	0	1
#11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#19	1	1	0	1	0	1	1	0	0	0	0	1	0	1	1	0	1	1	0	1	0	1	1	0	0	1	1	0	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	1
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1

Soft Switch No.	Marketing area																															
	Saudi Arabia								Singapore								Slovakia								South Africa							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

J. Market area 10

Soft Switch No.	Marketing area																															
	Spain								Sweden								Switzerland								Taiwan							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	1	0	0	1	1	0	1	0	1	0	0	1	1	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	1
#06	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
#08	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	0
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
#10	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	1
#11	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#19	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1

Soft Switch No.	Marketing area																															
	Spain								Sweden								Switzerland								Taiwan							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

K. Market area 11

Soft Switch No.	Marketing area															
	Turkey								Vietnam							
	Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	1	1	0	0	0	1	1	0	1	1	0	0	0	1	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	1	0	0	1	1	1	0	0	1	0	0	1	1
#06	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
#08	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#10	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1
#11	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#15	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#19	1	1	0	1	0	1	1	0	1	1	1	0	0	1	1	0
#20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#26	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1

Soft Switch No.	Marketing area															
	Turkey								Vietnam							
	Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

12.3 Soft switch definition

12.3.1 SOFT SWITCH: #01

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="6">Reserved</td><td rowspan="6">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="4">1</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">V.34 CI signal byte number</td><td rowspan="2"><table><tr><td>Byte number</td><td>30 bytes</td><td>9 bytes</td><td>15 bytes</td><td>60 bytes</td></tr><tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>1</td><td>1</td></tr>
</table>

12.3.2 SOFT SWITCH: #02

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Time between phase C to phase D signal in V.17
Example:
Image → EOP</td><td rowspan="2"><table><tr><td>Rx Insensitivity</td><td>**70 ms**</td><td>120 ms</td><td>180 ms</td><td>60 ms</td></tr><tr><td>Bit No. 8</td><td>**0**</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 7</td><td>**0**</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>Header TX selection open to user</td><td>**0: No**
1: Yes</td><td>0</td></tr>
<tr><td>5</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td rowspan="2">Transmit MCF signal level criteria</td><td rowspan="2"><table><tr><td>Percentage of error line</td><td>**10%**</td><td>15%</td><td>20%</td><td>25%</td></tr><tr><td>Bit No. 3</td><td>**0**</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 2</td><td>**0**</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>Sent N.G page</td><td>**0: Send N.G page and up to 3 times for that page**
1: Not re-send that N.G page for G3 mode</td><td>0</td></tr>
</table>

- Bit 1: N.G indicate our side detected RTN signal from other end. In this case machine can resend the same page up to three or just one time, and this use for G3 mode only.
- Bit 2-3: In G3 mode, if error line for each page, machine will send RTN instead of RTN, in this case, some machine will resend the same page again. The retry times depend on other end.
- Bit 6: If this bit set to “0”, the header select function can not change by user, only changeable by serviceman in service mode.

12.3.3 SOFT SWITCH: #03

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Send out NSF frame with station ID</td><td>1: Yes
0: No</td><td>1</td><td rowspan="4">8</td></tr>
<tr><td>7</td><td>Number of Pause within phone number</td><td>0: No any limitation
1: Max. up to 2 “P” within inputted telephone number</td><td>0</td></tr>
<tr><td>6</td><td>Re-dial prohibit for NO ANSWER</td><td>0: Continue to dial
1: Not allowed to re-dial if no any FAX signal or detected busy tone after dialing</td><td>0</td></tr>
<tr><td>5</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">RX level setting</td><td><table>
<tr><td>Rx level</td><td>-49 dB</td><td>-48 dB</td><td>-47 dB</td><td>-46 dB</td><td>-45 dB</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr>
</table></td><td>0</td><td rowspan="4">6</td></tr>
<tr><td>3</td><td><table>
<tr><td>Rx level</td><td>-44 dB</td><td>-43 dB</td><td>-42 dB</td><td>-41 dB</td><td>-40 dB</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>1</td></tr>
<tr><td>2</td><td><table>
<tr><td>Rx level</td><td>-39 dB</td><td>-38 dB</td><td>-37 dB</td><td>-36 dB</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>1</td></tr>
<tr><td>1</td><td><table>
<tr><td>Rx level</td><td colspan="2">Reserved</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td></tr>
</table>

- Bit 8: This bit set to 1, the answer machine will send machine name by NSF frame after connection.
- Bit 7: Can input Pause key to insert pause time between digits, this can put more than one “P” at the end of telephone number to increase calling time (T) after calling.

12.3.4 SOFT SWITCH: #04

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4	Visible alarm for RTN signal	0: No **1: Yes - display message while sending / receiving RTN signal (RTN= Retrain Negative).**	1	C
3	Audible alarm for RTN signal	0: No **1: Yes - alarm for sending or receiving RTN signal.**	1	
2	Reserved	Reserved	0	
1	Polarity change detection	**0: Not to detect phase reverse during dialing & calling** 1: Detect line phase reverse during dialing & calling	0	

- Bit 3: The duration of alarm last 3 second after detect negative signal in G3 mode
- Bit 4: The display message will keep on LCD 3 seconds or until next incoming T30 signal

12.3.5 SOFT SWITCH: #05

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Push Button ON/OFF Timing (PB)	See table below	0	0
7			0	
6	Relation between 10 key # & No.of dial pulse	See table below	0	
5			0	
4	Dial pulse make ratio select adjust (MR)	See tables below	1	8
3			0	
2			0	
1			0	

Push Button ON/OFF Timing (PB) (Bit No. 8, 7):

Timing (ms)	**ON:100 OFF:140**	ON: 70 OFF70	ON: 70 OFF: 140	ON: 90 OFF: 90
Bit No. 8	**0**	0	1	1
Bit No. 7	**0**	1	0	1

Relation between 10 key # & No.of dial pulse (Bit No. 6, 5):

#1	**1**	2	9	Reserved
#2	**2**	3	8	
#3	**3**	4	7	
#4	**4**	5	6	
#5	**5**	6	5	
#6	**6**	7	4	
#7	**7**	8	3	
#8	**8**	9	2	
#9	**9**	10	1	
#0	**10**	1	10	
Bit No. 6	**0**	0	1	1
Bit No. 5	**0**	1	0	1

Dial pulse make ratio select adjust (MR) (Bit No. 4, 3, 2, 1):

PPS	20	20	20	Reserved	16	16	16	Reserved
MR(%)	33	40	30		33	40	30	
Bit No. 4	0	0	0	0	0	0	0	0
Bit No. 3	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1

PPS	**10**	10	10	10	Reserved			
MR(%)	**33**	40	30	32				
Bit No. 4	**1**	1	1	1	1	1	1	1
Bit No. 3	**0**	0	0	0	1	1	1	1
Bit No. 2	**0**	0	1	1	0	0	1	1
Bit No. 1	**0**	1	0	1	0	1	0	1

12.3.6 SOFT SWITCH: #06

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Ring on time to ignore ring off time at 1st cycle</td><td rowspan="2"><table><tr><td>Timing (ms)</td><td>50 ms</td><td>100 ms</td><td>150 ms</td><td>800 ms</td></tr><tr><td>Bit No. 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td><td rowspan="4">4</td></tr>
<tr><td>7</td><td>1</td></tr>
<tr><td>6</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="2">Ring off time at 1st. cycle to approve incoming ring</td><td rowspan="2"><table><tr><td>Timing (ms)</td><td>100 ms</td><td>250 ms</td><td>500 ms</td><td>1000 ms</td></tr><tr><td>Bit No. 4</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 3</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>1</td><td rowspan="4">F</td></tr>
<tr><td>3</td><td>1</td></tr>
<tr><td>2</td><td rowspan="2">Pulse cycle to approve ring fre-quency</td><td rowspan="2"><table><tr><td>Cycle</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>Bit No. 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>1</td></tr>
<tr><td>1</td><td>1</td></tr>
</table>

12.3.7 SOFT SWITCH: #07

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td rowspan="2">8</td><td rowspan="2">Dial tone or busy tone detection</td><td>0: Disable</td><td rowspan="2">0</td><td rowspan="8">0</td></tr>
<tr><td>1: Enable - Detect dial tone before dial</td></tr>
<tr><td rowspan="2">7</td><td rowspan="2">PSTN/PBX setting</td><td>0: PSTN</td><td rowspan="2">0</td></tr>
<tr><td>1: PBX - Select PBX line type</td></tr>
<tr><td rowspan="2">6</td><td rowspan="2">PBX dial tone detect</td><td>0: Not to detect dial tone before pre-fix number</td><td rowspan="2">0</td></tr>
<tr><td>1: Detect dial tone before the pre-fix number in PBX mode</td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">Dial mode select</td><td>0: DTMF - PB</td><td rowspan="2">0</td></tr>
<tr><td>1: Pulse - DP</td></tr>
<tr><td>4</td><td rowspan="4">TX Level select for PSK/FSK</td><td rowspan="4">
<table>
<tr><td>Level (dBm)</td><td>-17</td><td>-16</td><td>-15</td><td>-14</td><td>-13</td><td>-12</td><td>-11</td><td>-10</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Level (dBm)</td><td>-9</td><td>-8</td><td>-7</td><td>-6</td><td>-5</td><td>-4</td><td>-3</td><td>-2</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>1</td><td rowspan="4">8</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

12.3.8 SOFT SWITCH: #08

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Sending RTN signal level	1: (Normal, Fine)=(6,12) continue error line **0: (Normal, Fine)=(12,24) continue error line**	0	6
7	Detect busy tone after dialing	0: Not to detect **1: Detect busy tone after dialing**	1	
6	Sending CED signal after connection	0: Not to send **1: Send CED signal before DIS signal after connection**	1	
5	Reserved	Reserved	0	
4	Re-dial interval	(see tables below)	0	1
3			0	
2			0	
1			1	

Re-dial interval (Bits 4–1):

Auto dial interval	1, 1, 1, 1, 1, 10, 1, 1, 1.	**3, 3, 15, 3, 3.**	1, 1, 15.	3, 3.	1, 1, 1.	3, 3, 3.	1, 1.	3, 3, 3, 3.
Bit No. 4	0	**0**	0	0	0	0	0	0
Bit No. 3	0	**0**	0	0	1	1	1	1
Bit No. 2	0	**0**	1	1	0	0	1	1
Bit No. 1	0	**1**	0	1	0	1	0	1

Auto dial interval	1, 1, 1, 1.	2, 2.	5, 5, 5, 5.	1, 2, 2, 2.	2, 2, 2, 2, 2, 2, 2, 2, 2, 2.	2, 2, 10, 2, 2, 2.	3, 3, 10, 3, 3, 3, 3.	10, 10, 10, 10, 15, 10.
Bit No. 4	1	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1

- Bit 8: If error line above definition, machine will send RTN signal instead of MCF signal. This will cause the other party send the same page again.

12.3.9 SOFT SWITCH: #09

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Ringer frequency detection</td><td rowspan="2"><table>
<tr><td>Ringer frequency range (Hz)</td><td>10 to 75</td><td>20 to 57.5</td><td>20 to 75</td><td>10 to 75</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
<tr><td>5</td><td>TSI/CSI append “+”</td><td>0: Not append “+” before send out TSI/CSI
1: Automatically insert “+”</td><td>0</td></tr>
<tr><td>4</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">Time from RX DIS signal to send DCS signal</td><td rowspan="2"><table>
<tr><td>Description</td><td>70 ms</td><td>120 ms</td><td>180 ms</td><td>240 ms</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 5: This bit set to “1”, the “+” character will put in the first position on CSI and TSI command.

12.3.10 SOFT SWITCH: #10

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td rowspan="2">8</td><td rowspan="2">Print out RTN page report</td><td>0: Not to Print</td><td rowspan="2">1</td><td rowspan="5">A</td></tr>
<tr><td>1: Print Out RTN page report after transaction for TX/ RX RTN signal</td></tr>
<tr><td rowspan="2">7</td><td rowspan="2">Confirmation report result field</td><td>0: Print “OK”</td><td rowspan="2">0</td></tr>
<tr><td>1: Print “NG” in case of sending or receiving RTN signal</td></tr>
<tr><td>6</td><td rowspan="2">Get gap time between digit for pulse dial</td><td rowspan="2"><table><tr><td>Value (ms)</td><td>550</td><td>650</td><td>750</td><td>850</td></tr><tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>1</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td rowspan="2">4</td><td rowspan="2">RX PIP T.30 command after send out MPS command</td><td>0: Send DCS at current speed</td><td rowspan="2">0</td><td rowspan="8">1</td></tr>
<tr><td>1: Return to Tx phase B waiting for DIS signal</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Received DIS signal within reception</td><td>0: Repeat sending DIS/DTC again until time out</td><td rowspan="2">0</td></tr>
<tr><td>1: Disconnected after sending DCN signal</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">Transmission time limitation</td><td>1: Limit to 8 minutes from data phase</td><td rowspan="2">0</td></tr>
<tr><td>0: No any limitation until document jam</td></tr>
<tr><td rowspan="2">1</td><td rowspan="2">Audio alarm after communication fail</td><td>0: Not to alarm after transaction fail</td><td rowspan="2">1</td></tr>
<tr><td>1: Alarm 3 seconds after disconnected</td></tr>
</table>

- Bit 8: If this bit set to 1, machine will print out confirmation report after each transaction.
- Bit 7: If this bit set to1, the result field will show “NG” instead of “OK” in the confirmation report and activity report or checking the result on the LCD.
- Bit 2: This for Manual Tx only.

12.3.11 SOFT SWITCH: #11

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">2</td></tr>
<tr><td>7</td><td>Detect dial tone after pre-fix number</td><td>0: No
1: Yes</td><td>0</td></tr>
<tr><td>6</td><td>Pulse dial allowed to select</td><td>0: Yes
1: Not allowed</td><td>1</td></tr>
<tr><td>5</td><td>Protocol signal Display mode</td><td>0: Not to display
1: Display V8 or T30 command within communication.</td><td>0</td></tr>
<tr><td>4</td><td rowspan="3">Reserved</td><td rowspan="3">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>DTMF high frequency dB value</td><td>0: Base on SW19 (1-4)
1: High 1 dB</td><td>0</td></tr>
</table>

- Bit 6: If this bit set to 1, not allowed user to select pulse dial, and this function open serviceman to change.
- Bit 7: Bit set to 1, LCD will show the command between each party, the detail specification see service mode specification.

12.3.12 SOFT SWITCH: #12

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>ECM mode capability</td><td>1: Yes
0: No - also disable V.34 modem capability</td><td>1</td><td rowspan="4">8</td></tr>
<tr><td>7</td><td rowspan="2">V.34 fall back counter for V.34 TX</td><td rowspan="2"><table><tr><td>Counter</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>Bit No. 7</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 6</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>Send CTC after 4th PPR</td><td>0: Send CTC (Continue To Correct)
1: Send EOR (End Of Transmission)</td><td>0</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>Send EOR after lowest speed</td><td>0: Send DCN (Re-dial)
1: Send EOR_xxx [Germany PTT]</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">TCF transmission timing after DCS signal</td><td rowspan="2"><table><tr><td>Description (ms)</td><td>70</td><td>80</td><td>90</td><td>100</td></tr><tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 1-2: Delay time from FSK mode to PSK mode, this use for G3 mode only, V.34 don’t need this setting
- Bit 6-7: If counter equal “1”, machine will down to next lower speed for next data phase.

12.3.13 SOFT SWITCH: #13

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td rowspan="2">8</td><td rowspan="2">MR capability for G3</td><td>0: Yes</td><td rowspan="2">0</td><td rowspan="7">1</td></tr>
<tr><td>1: No</td></tr>
<tr><td>7</td><td rowspan="2">Delay time between transaction</td><td rowspan="2"><table><tr><td>Description (sec)</td><td>20</td><td>60</td><td>120</td><td>240</td></tr><tr><td>Bit No. 7</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 6</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">Super fine printing capability for receiving</td><td>0: No</td><td rowspan="2">1</td></tr>
<tr><td>1: Yes</td></tr>
<tr><td rowspan="2">4</td><td rowspan="2">Disable ultra fine capability in RX mode</td><td>0: No</td><td rowspan="2">0</td><td rowspan="8">0</td></tr>
<tr><td>1: Yes</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">DTS mode</td><td>0: No</td><td rowspan="2">0</td></tr>
<tr><td>1: Yes</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">Send DTC signal if RX DIS signal in polling RX mode
(no function on G4)</td><td>1: No - send DIS again</td><td rowspan="2">0</td></tr>
<tr><td>0: Yes</td></tr>
<tr><td>1</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
</table>

- Bit 7 to 6: If set to 1, the time between each transaction will become longer, in this case machine will wait more time before start to dial next transaction.
- Bit 4: the resolution define:
  Stand - R8 x 3.85 lines/mm
  Fine - R8 x 7.7 lines/mm
  Supper fine - R8 x 15.4 lines/mm
  Ultra fine - R16 x 15.4 lines/mm

12.3.14 SOFT SWITCH: #14

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6	Memory size level To RX	1: Up to 128 KB **0: Base on system configuration**	0	
5	Reserved	Reserved	0	
4			0	2
3	Time between V.34 ANSam signal and FSK DIS signal	(see timer table below)	0	
2			1	
1			0	

Timer (ms)	50	60	**70**	80	100	120	140	160
Bit No. 3	0	0	**0**	0	1	1	1	1
Bit No. 2	0	0	**1**	1	0	0	1	1
Bit No. 1	0	1	**0**	1	0	1	0	1

- Bit 6: If set to 1, machine will become manual RX mode if available memory size less than 128 K.

12.3.15 SOFT SWITCH: #15

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	IPSEL1	**0: Close the IPSEL1 port** 1: Active the IPSEL1 port	0	0
7	DCSEL	**0: Close the DCSEL port** 1: Active the DCSEL port	0	
6	DCLIM	**0: Close the DCLIM port** 1: Active the DCLIM port	0	
5	Reserved	Reserved	0	
4			0	0
3			0	
2			0	
1			0	

12.3.16 SOFT SWITCH: #16

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="6">Reserved</td><td rowspan="6">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="4">3</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">Fax communication coding method</td><td rowspan="2"><table>
<tr><td>Coding method</td><td>MMR</td><td>MR</td><td>MH</td><td>JBIG</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>1</td></tr>
<tr><td>1</td><td>1</td></tr>
</table>

12.3.17 SOFT SWITCH: #17

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>CED frequency</td><td>0: 2100 Hz
1: 1100 Hz</td><td>0</td></tr>
<tr><td>5</td><td rowspan="3">Pause between off hook and CED signal</td><td rowspan="3"><table>
<tr><td>Time (T)</td><td>1.8 sec to 2.5 sec</td><td>T+ 100 ms</td><td>T+ 200 ms</td><td>T+ 300 ms</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Time (T)</td><td>T+ 400 ms</td><td>T+ 500 ms</td><td>T+ 600 ms</td><td>T+ 700 ms</td></tr>
<tr><td>Bit No. 5</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">Inactivity timer [T5]</td><td rowspan="2"><table>
<tr><td>Description</td><td>T5</td><td>T5 + 20 sec</td><td>T5 + 40 sec</td><td>T5 + 60 sec</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- T5: 60 ± 5 sec. in ITU-T standard

12.3.18 SOFT SWITCH: #18

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td rowspan="2">G3 mode training quality level</td><td rowspan="2"><table><tr><td>Definition</td><td>Level1</td><td>Level2</td><td>Level3</td><td>Level4</td></tr><tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">Redefine re-dial attempts counter

If the
SW20 [1 to 5] =
[0,0,0,0,0]
Machine doesn’t refer This setting.
Kept refer SW8 [1 to 4] setting.</td><td rowspan="4"><table><tr><td>Counter</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td></tr><tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr></table><table><tr><td>Counter</td><td colspan="5">Reserved</td></tr><tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit No. 3</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit No. 2</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 1 to 4: The re-dial time will followings bit 1 to 4 if these bits not all clear. Otherwise the re-dial time will followings bit 1 to 4 on SW08.
- Bit 5-6: Level 1 training check phases are not so severe than level 2,3,4. Level 2,3,4 can keep higher RX speed communication than level 1 for poor line condition

12.3.19 SOFT SWITCH: #19

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="4">CNG signal level</td><td rowspan="4">
<table>
<tr><td>Level (dBm)</td><td>-17</td><td>-16</td><td>-15</td><td>-14</td><td>-13</td><td>-12</td><td>-11</td><td>-10</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Level (dBm)</td><td>-9</td><td>-8</td><td>-7</td><td>-6</td><td>-5</td><td>-4</td><td>-3</td><td>-2</td></tr>
<tr><td>Bit No. 8</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="4">6</td></tr>
<tr><td>7</td><td>1</td></tr>
<tr><td>6</td><td>1</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">DTMF high frequency level</td><td rowspan="4">
<table>
<tr><td>Level (dBm)</td><td>-17</td><td>-16</td><td>-15</td><td>-14</td><td>-13</td><td>-12</td><td>-11</td><td>-10</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Level (dBm)</td><td>-9</td><td>-8</td><td>-7</td><td>-6</td><td>-5</td><td>-4</td><td>-3</td><td>-2</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>1</td><td rowspan="4">8</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

12.3.20 SOFT SWITCH: #20

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5	Re-dial interval (unit = minute) If the SW18 [1 to 4] = [0,0,0,0] Machine doesn't refer This setting. Kept refer SW8[1 to 4] setting.		0	
4			0	0
3			0	
2			0	
1			0	

Interval (min)	**0**	1	2	3	4	5	6	7	8	9	10	11
Bit No. 5	**0**	0	0	0	0	0	0	0	0	0	0	0
Bit No. 4	**0**	0	0	0	0	0	0	0	1	1	1	1
Bit No. 3	**0**	0	0	0	1	1	1	1	0	0	0	0
Bit No. 2	**0**	0	1	1	0	0	1	1	0	0	1	1
Bit No. 1	**0**	1	0	1	0	1	0	1	0	1	0	1

Interval (min)	12	13	14	15	16	17	18	19	20
Bit No. 5	0	0	0	0	1	1	1	1	1
Bit No. 4	1	1	1	1	0	0	0	0	0
Bit No. 3	1	1	1	1	0	0	0	0	1
Bit No. 2	0	0	1	1	0	0	1	1	0
Bit No. 1	0	1	0	1	0	1	0	1	0

Interval (min)	Reserved										
Bit No. 5	1	1	1	1	1	1	1	1	1	1	1
Bit No. 4	0	0	0	1	1	1	1	1	1	1	1
Bit No. 3	1	1	1	0	0	0	0	1	1	1	1
Bit No. 2	0	1	1	0	0	1	1	0	0	1	1
Bit No. 1	1	0	1	0	1	0	1	0	1	0	1

12.3.21 SOFT SWITCH: #21

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td rowspan="2">8</td><td rowspan="2">NSS signal before DCS</td><td>0: Not to send NSS signal for self mode in TX mode</td><td rowspan="2">1</td><td rowspan="7">8</td></tr>
<tr><td>1: Send NSS signal if remote side is same model</td></tr>
<tr><td>7</td><td rowspan="2">CNG sending duration after dialing</td><td rowspan="2"><table><tr><td>Duration (unit=sec)</td><td>40</td><td>60</td><td>70</td><td>120</td></tr><tr><td>Bit No. 7</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 6</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">T4 timer</td><td>0: 3.0 sec. Normal case</td><td rowspan="2">0</td></tr>
<tr><td>1: 4.5 sec.</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="7">0</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">DIS signal length</td><td>0: Normal length (Bit 1 to 64)</td><td rowspan="2">0</td></tr>
<tr><td>1: 4 bytes DIS command. bit 1 to 32 only</td></tr>
<tr><td>2</td><td rowspan="2">Increase default T1 Timing during calling (Only for TX function)</td><td rowspan="2"><table><tr><td>Description (sec)</td><td>T1</td><td>T1+ 30</td><td>T1+ 40</td><td>T1+60</td></tr><tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 1 to 2: T1 indicate the calling time after dialing, can adjust the T1 time more long by change the default value. The default T1 timer depends on each country regulation.
- Bit 3: Some old machine can not accept DIS command over 4 bytes, and every time will become fail. In this case can set this bit to 1. If this bit set to 1, JBIG and V8 capability will disable automatically.
- Bit 8: Sender machine’s name will show on the other party’s LCD or print on the report if remote side is the same model.

12.3.22 SOFT SWITCH: #22

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Detect busy tone before dial	1: Check busy tone within dial tone detection **0: Not to check**	0	0
7	Regard dial tone as busy tone after dialing	1: Yes - Check dial tone after dialing **0: No**	0	
6	Check busy tone method	**0: Measure tone by input energy over threshold** 1: By PTT regulation tone frequency	0	
5	Reserved	Reserved	0	
4	CED signal output level	(see table below)	0	6
3			1	
2			1	
1			0	

Level (dBm)	-17	-16	-15	-14	-13	-12	**-11**	-10
Bit No. 4	0	0	0	0	0	0	**0**	0
Bit No. 3	0	0	0	0	1	1	**1**	1
Bit No. 2	0	0	1	1	0	0	**1**	1
Bit No. 1	0	1	0	1	0	1	**0**	1

Level (dBm)	-9	-8	-7	-6	-5	-4	-3	-2
Bit No. 4	1	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1

12.3.23 SOFT SWITCH: #23

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

12.3.24 SOFT SWITCH: #24

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

12.3.25 SOFT SWITCH: #25

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4	Flash key time in ON hook key dial	Flash time (ms): 100 / 80 / 60 / 50 Bit No. 4: 0 / 0 / 1 / 1 Bit No. 3: 0 / 1 / 0 / 1	0	0
3			0	
2	Reserved	Reserved	0	
1			0	

Flash time (ms)	100	80	60	50
Bit No. 4	0	0	1	1
Bit No. 3	0	1	0	1

12.3.26 SOFT SWITCH: #26

Bit No.	Designation	Initial Setting Bit	Initial Setting HEX
8	Dial tone detection time before discon-nected	0	2
7		0	
6	Dial tone Insensitivity (0 to -40 dBm)	1	
5		0	
4		1	8
3		0	
2		0	
1		0	

Function (Bit No. 8, 7):

Time (unit=sec)	**10**	15	20	25
Bit No. 8	**0**	0	1	1
Bit No. 7	**0**	1	0	1

Function (Bit No. 6 to 1):

Level (dBm)	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Bit No. 6	0	0	0	0	0	0	0	0	0	0	0
Bit No. 5	0	0	0	0	0	0	0	0	0	0	0
Bit No. 4	0	0	0	0	0	0	0	0	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1	0	0	0
Bit No. 2	0	0	1	1	0	0	1	1	0	0	1
Bit No. 1	0	1	0	1	0	1	0	1	0	1	0

Level (dBm)	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20
Bit No. 6	0	0	0	0	0	0	0	0	0	0
Bit No. 5	0	0	0	0	0	1	1	1	1	1
Bit No. 4	1	1	1	1	1	0	0	0	0	0
Bit No. 3	0	1	1	1	1	0	0	0	0	1
Bit No. 2	1	0	0	1	1	0	0	1	1	0
Bit No. 1	1	0	1	0	1	0	1	0	1	0

Level (dBm)	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30
Bit No. 6	0	0	0	0	0	0	0	0	0	0
Bit No. 5	1	1	1	1	1	1	1	1	1	1
Bit No. 4	0	0	0	1	1	1	1	1	1	1
Bit No. 3	1	1	1	0	0	0	0	1	1	1
Bit No. 2	0	1	1	0	0	1	1	0	0	1
Bit No. 1	1	0	1	0	1	0	1	0	1	0

Level (dBm)	-31	-32	-33	-34	-35	-36	-37	-38	-39	**-40**
Bit No. 6	0	1	1	1	1	1	1	1	1	**1**
Bit No. 5	1	0	0	0	0	0	0	0	0	**0**
Bit No. 4	1	0	0	0	0	0	0	0	0	**1**
Bit No. 3	1	0	0	0	0	1	1	1	1	**0**
Bit No. 2	1	0	0	1	1	0	0	1	1	**0**
Bit No. 1	1	0	1	0	1	0	1	0	1	**0**

Level (dBm)	-41 to -50
Bit No. 6-1	Setting disable

12.3.27 SOFT SWITCH: #27

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="4">Reserved</td><td rowspan="4">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">Immunity for dial tone receiver</td><td rowspan="4">
<table>
<tr><td>Level (dBm)</td><td>0</td><td>-1</td><td>-2</td><td>-3</td><td>-4</td><td>-5</td><td>-6</td><td>-7</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Level (dBm)</td><td>-8</td><td>-9</td><td>-10</td><td>-11</td><td>-12</td><td>-13</td><td>-14</td><td>-15</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 1 to 4: Line input energy must be over this level before dialing

12.3.28 SOFT SWITCH: #28

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="4">Time to dial after dial tone on the line</td><td rowspan="4">
<table>
<tr><td>Time (msec)</td><td>0</td><td>100</td><td>200</td><td>300</td><td>400</td><td>500</td><td>600</td><td>700</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Time (msec)</td><td>800</td><td>900</td><td>1000</td><td>1100</td><td>1200</td><td>1300</td><td>1400</td><td>1500</td></tr>
<tr><td>Bit No. 8</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>1</td><td rowspan="4">A</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>1</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">CED duration time within calling period</td><td rowspan="4">
<table>
<tr><td>Time (msec)</td><td>0</td><td>100</td><td>200</td><td>300</td><td>400</td><td>500</td><td>600</td><td>700</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Time (msec)</td><td>800</td><td>900</td><td>1000</td><td>1100</td><td>1200</td><td>1300</td><td>1400</td><td>1500</td></tr>
<tr><td>Bit No. 8</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="4">7</td></tr>
<tr><td>3</td><td>1</td></tr>
<tr><td>2</td><td>1</td></tr>
<tr><td>1</td><td>1</td></tr>
</table>

- Bit 1-4: The CED duration time level for automatic transmation

12.3.29 SOFT SWITCH: #29

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	1
7			0	
6			0	
5	Time To dial after seize the line when dial tone detected (Unit= 200 msec)	(see tables below)	1	
4			0	4
3			1	
2			0	
1			0	

Time (sec)	0	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8
Bit No. 5	0	0	0	0	0	0	0	0	0	0
Bit No. 4	0	0	0	0	0	0	0	0	1	1
Bit No. 3	0	0	0	0	1	1	1	1	0	0
Bit No. 2	0	0	1	1	0	0	1	1	0	0
Bit No. 1	0	1	0	1	0	1	0	1	0	1

Time (sec)	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8
Bit No. 5	0	0	0	0	0	0	1	1	1	1
Bit No. 4	1	1	1	1	1	1	0	0	0	0
Bit No. 3	0	0	1	1	1	1	0	0	0	0
Bit No. 2	1	1	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1	0	1

Time (sec)	**4.0**	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6	5.8
Bit No. 5	**1**	1	1	1	1	1	1	1	1	1
Bit No. 4	**0**	0	0	0	1	1	1	1	1	1
Bit No. 3	**1**	1	1	1	0	0	0	0	1	1
Bit No. 2	**0**	0	1	1	0	0	1	1	0	0
Bit No. 1	**0**	1	0	1	0	1	0	1	0	1

Time (sec)	6.0	6.2
Bit No. 5	1	1
Bit No. 4	1	1
Bit No. 3	1	1
Bit No. 2	1	1
Bit No. 1	0	1

12.3.30 SOFT SWITCH: #30

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Pause delay time within digits Ex. 002Pxxxxxx	See table A	0	6
7			1	
6	Signal tone Insensitivity (dBm) After dial for busy tone	See table B	1	
5			0	
4			1	8
3			0	
2			0	
1			0	

Table A (Bit No. 8–7)

Time (sec)	2.0	**2.5**	3.0	3.5
Bit No. 8	0	**0**	1	1
Bit No. 7	0	**1**	0	1

Table B (Bit No. 6–1)

Level (dBm)	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Bit No. 6	0	0	0	0	0	0	0	0	0	0	0
Bit No. 5	0	0	0	0	0	0	0	0	0	0	0
Bit No. 4	0	0	0	0	0	0	0	0	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1	0	0	0
Bit No. 2	0	0	1	1	0	0	1	1	0	0	1
Bit No. 1	0	1	0	1	0	1	0	1	0	1	0

Level (dBm)	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20
Bit No. 6	0	0	0	0	0	0	0	0	0	0
Bit No. 5	0	0	0	0	0	1	1	1	1	1
Bit No. 4	1	1	1	1	1	0	0	0	0	0
Bit No. 3	0	1	1	1	1	0	0	0	0	1
Bit No. 2	1	0	0	1	1	0	0	1	1	0
Bit No. 1	1	0	1	0	1	0	1	0	1	0

Level (dBm)	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30
Bit No. 6	0	0	0	0	0	0	0	0	0	0
Bit No. 5	1	1	1	1	1	1	1	1	1	1
Bit No. 4	0	0	0	1	1	1	1	1	1	1
Bit No. 3	1	1	1	0	0	0	0	1	1	1
Bit No. 2	0	1	1	0	0	1	1	0	0	1
Bit No. 1	1	0	1	0	1	0	1	0	1	0

Level (dBm)	-31	-32	-33	-34	-35	-36	-37	-38	-39	**-40**
Bit No. 6	0	1	1	1	1	1	1	1	1	**1**
Bit No. 5	1	0	0	0	0	0	0	0	0	**0**
Bit No. 4	1	0	0	0	0	0	0	0	0	**1**
Bit No. 3	1	0	0	0	0	1	1	1	1	**0**
Bit No. 2	1	0	0	1	1	0	0	1	1	**0**
Bit No. 1	1	0	1	0	1	0	1	0	1	**0**

Level (dBm)	-41 to -50
Bit No. 6-1	Setting disable

12.3.31 SOFT SWITCH: #31

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

12.3.32 SOFT SWITCH: #32

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

12.3.33 SOFT SWITCH: #33

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="7">4</td></tr>
<tr><td rowspan="2">7</td><td rowspan="2">V.17 Echo protection tone</td><td>0: off</td><td rowspan="2">1</td></tr>
<tr><td>1: On</td></tr>
<tr><td rowspan="2">6</td><td rowspan="2">V.29 Echo protection tone</td><td>0: Off</td><td rowspan="2">0</td></tr>
<tr><td>1: On</td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">Compromise equalize enable (CEQ) in the transmit path (TCEQ)</td><td>0: No</td><td rowspan="2">0</td></tr>
<tr><td>1: Yes</td></tr>
<tr><td rowspan="2">4</td><td rowspan="2">Compromise equalize enable (CEQ) in the receiver path (RCEQ)</td><td>0: No</td><td rowspan="2">0</td><td rowspan="5">0</td></tr>
<tr><td>1: Yes</td></tr>
<tr><td>3</td><td rowspan="3">Reserved</td><td rowspan="3">Reserved</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 4-5: V.17,V.29 and V.27 only

12.3.34 SOFT SWITCH: #34

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="6">Reserved</td><td rowspan="6">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="5">2</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">Password capability in DIS/DTC frame</td><td>0: No</td><td rowspan="2">1</td></tr>
<tr><td>1: Yes</td></tr>
<tr><td>1</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
</table>

12.3.35 SOFT SWITCH: #35

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Dial tone table switch time</td><td rowspan="2"><table>
<tr><td>Time (ms)</td><td>300</td><td>600</td><td>1000</td><td>2000</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>1</td><td rowspan="4">A</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td rowspan="3">Dial tone frequency upper range index</td><td rowspan="3">See Bit No. 1 to 3</td><td>1</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td rowspan="3">Dial tone frequency low range index</td><td rowspan="3"><table>
<tr><td>Frequency range (Hz)</td><td>375 to 462</td><td>310 to 380</td><td>462 to 580</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td></tr>
</table>
<table>
<tr><td>Frequency range (Hz)</td><td>570 to 630</td><td>300 to 370</td><td colspan="3">Reserved</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

12.3.36 SOFT SWITCH: #36

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Re-dial attempts continue fail counter (Using for detect line problem error)	0: No any limitation **1: limit up to bit 1 to 4**	1	8
7	Reserved	Reserved	0	
6			0	
5			0	
4	Re-dial attempts fail limitation counter (Using for detect line problem error)	(see counter table below)	1	A
3			0	
2			1	
1			0	

Counter	0	1	2	3	4	5	6	7
Bit No. 4	0	0	0	0	0	0	0	0
Bit No. 3	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1

Counter	8	9	**10**	11	12	13	14	15
Bit No. 4	1	1	**1**	1	1	1	1	1
Bit No. 3	0	0	**0**	0	1	1	1	1
Bit No. 2	0	0	**1**	1	0	0	1	1
Bit No. 1	0	1	**0**	1	0	1	0	1

- Bit 8: The re-dial fail counter will plus 1 for each auto dialing, unless user interruption or after finish communication. If the counter over the setting in bit 1 to 4 and Bit set to 1, then the machine will stop to dial unless user interruption or entry communication phase.

12.3.37 SOFT SWITCH: #37

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td rowspan="2">8</td><td rowspan="2">Polling TX type for V.34 modem</td><td>0: V.34</td><td rowspan="2">0</td><td rowspan="6">0</td></tr>
<tr><td>1: V.17</td></tr>
<tr><td rowspan="2">7</td><td rowspan="2">Auto dial learning for V.34 modem</td><td>0: Yes - skip V.34 handshaking with remote side</td><td rowspan="2">0</td></tr>
<tr><td>1: No - retry from V.8 handshake</td></tr>
<tr><td>6</td><td rowspan="3">RX start symbol rate for V.34 modem</td><td rowspan="3">See Bit No. 1 to 3</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td rowspan="3">TX start symbol rate for V.34 modem</td><td rowspan="3">
<table>
<tr><td>Symbol rate (sym/s)</td><td>3429</td><td>3200</td><td>3000</td><td>2800</td><td>2400</td></tr>
<tr><td>Max. speed (kbps)</td><td>33.6</td><td>31.2</td><td>26.4</td><td>24.0</td><td>21.6</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr>
</table>
<table>
<tr><td>Symbol rate</td><td colspan="3" rowspan="2">Reserved</td></tr>
<tr><td>Max. speed</td></tr>
<tr><td>Bit No. 6</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

12.3.38 SOFT SWITCH: #38

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td rowspan="2">8</td><td rowspan="2">Fine tune of 33.6 kbps/ 31.2 kbps receiving speed for V.34 modem</td><td>1: Yes</td><td rowspan="2">1</td><td rowspan="6">E</td></tr>
<tr><td>0: No - modem default setting</td></tr>
<tr><td rowspan="2">7</td><td rowspan="2">Set/Reset V.34 transmit level deviation</td><td>0: Reset</td><td rowspan="2">1</td></tr>
<tr><td>1: Set</td></tr>
<tr><td>6</td><td rowspan="2">V.34 flag number between ECM frame</td><td rowspan="2"><table><tr><td>Flags number</td><td>2</td><td>4</td><td>8</td><td>10</td></tr><tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>1</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td rowspan="2">4</td><td rowspan="2">Phase 2 guard tone power level (V.34)</td><td>0: normal power level</td><td rowspan="2">0</td><td rowspan="6">1</td></tr>
<tr><td>1: -7 db of normal power level</td></tr>
<tr><td>3</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td rowspan="2">1</td><td rowspan="2">V.8 /V.34 capability</td><td>0: No</td><td rowspan="2">1</td></tr>
<tr><td>1: Yes</td></tr>
</table>

- Bit 8: This bit set to 1 can get more high speed communication for V.34 at the same line condition.

12.3.39 SOFT SWITCH: #39

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Disable V.34 TX for V.34 modem</td><td>1: Yes
0: No</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>Disable V.34 RX for V.34 modem</td><td>1: Yes
0: No</td><td>0</td></tr>
<tr><td>6</td><td rowspan="2">Flags number in FSK frame for V.34 modem</td><td rowspan="2"><table><tr><td>Flags number</td><td>**1**</td><td>2</td><td>3</td><td>4</td></tr><tr><td>Bit No. 6</td><td>**0**</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 5</td><td>**0**</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>Manual TX mode for V.34 modem</td><td>**0: V.8 - start handshake from V.8**
1: V.17</td><td>0</td><td rowspan="4">1</td></tr>
<tr><td>3</td><td>Switch from V.17 to V.34 if DIS Bit 6 set after received DIS</td><td>**0: Yes - start V.8 handshaking. but only first time**
1: No - Continue start with.17</td><td>0</td></tr>
<tr><td>2</td><td rowspan="2">Delay time in primary channel for V.34 transmit after CFR or MCF signal</td><td rowspan="2"><table><tr><td>Symbol rate (ms)</td><td>100</td><td>**200**</td><td>300</td><td>500</td></tr><tr><td>Bit No. 2</td><td>0</td><td>**0**</td><td>1</td><td>1</td></tr><tr><td>Bit No. 1</td><td>0</td><td>**1**</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>1</td><td>1</td></tr>
</table>

12.3.40 SOFT SWITCH: #40

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="4">V.17 RX start speed
Select receiving start speed for V.17</td><td rowspan="4">
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.17</td><td>V.17</td><td>V.17</td><td>V.17</td></tr>
<tr><td>14400</td><td>12200</td><td>9600</td><td>7200</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.29</td><td>V.29</td><td>V.27</td><td>V.27 ter</td></tr>
<tr><td>9600</td><td>7200</td><td>4800</td><td>2400</td></tr>
<tr><td>Bit No. 8</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 7</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>Speed</td><td colspan="8">Reserved</td></tr>
<tr><td>Bit No. 8</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>Reserved</td><td>Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td rowspan="3">V.34 RX start speed
Prohibit V.34 mode
When upper speed less</td><td rowspan="3">
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.34</td><td>V.34</td><td>V.34</td><td>V.34</td></tr>
<tr><td>33600</td><td>31200</td><td>28800</td><td>26400</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td rowspan="2">Speed (bps)</td><td>V.34</td><td>V.34</td><td>V.34</td><td>V.34</td></tr>
<tr><td>24000</td><td>21600</td><td>19200</td><td>16800</td></tr>
<tr><td>Bit No. 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

12.3.41 SOFT SWITCH: #41

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	V.17 TX start speed select receiving start speed for V.17	(see tables A below)	0	0
7			0	
6			0	
5			0	
4	Reserved	Reserved	0	
3	V.34 TX start speed prohibit V.34 mode when upper speed less	(see tables B below)	0	0
2			0	
1			0	

Tables A (bits 8–5):

Speed (bps)	**V.17 14400**	V.17 12200	V.17 9600	V.17 7200
Bit No. 8	**0**	0	0	0
Bit No. 7	**0**	0	0	0
Bit No. 6	**0**	0	1	1
Bit No. 5	**0**	1	0	1

Speed (bps)	V.29 9600	V.29 7200	V.27 4800	V.27 ter 2400
Bit No. 8	0	0	0	0
Bit No. 7	1	1	1	1
Bit No. 6	0	0	1	1
Bit No. 5	0	1	0	1

Speed	Reserved							
Bit No. 8	1	1	1	1	1	1	1	1
Bit No. 7	0	0	0	0	1	1	1	1
Bit No. 6	0	0	1	1	0	0	1	1
Bit No. 5	0	1	0	1	0	1	0	1

Tables B (bits 3–1):

Speed (bps)	**V.34 33600**	V.34 31200	V.34 28800	V.34 26400
Bit No. 3	**0**	0	0	0
Bit No. 2	**0**	0	1	1
Bit No. 1	**0**	1	0	1

Speed (bps)	V.34 24000	V.34 21600	V.34 19200	V.34 16800
Bit No. 3	1	1	1	1
Bit No. 2	0	0	1	1
Bit No. 1	0	1	0	1

12.3.42 SOFT SWITCH: #42

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

12.3.43 SOFT SWITCH: #43

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

12.3.44 SOFT SWITCH: #44

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

12.3.45 SOFT SWITCH: #45

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6	Close network	**0: Off**	0	
		1: On		
5	Reserved	Reserved	0	
4			0	0
3			0	
2			0	
1			0	

12.3.46 SOFT SWITCH: #46

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Daylight savings timer	0: No	1	8
		1: Yes		
7	Reserved	Reserved	0	
6			0	
5			0	
4	RX print mode	0: RX one page then print one page. (PRINT RX)	1	A
		1: Start to print after receiving all pages. (MEMORY RX)		
3	Default TX mode	**0: Memory TX**	0	
		1: ADF TX		
2	Header for FAX TX	0: Off	1	
		1: On - transmit header at top of each page		
1	Print model name on top of TX page If name not register	**0: No**	0	
		1: Yes		

- Bit 1: If machine name not registered, the model name will print at the top of each receiving page. The default is not to print. (base on custom ID)
- Bit 2: Some country such as U.S.A PTT regulation, must be send header at top of each page.

12.3.47 SOFT SWITCH: #47

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="2">Reserved</td><td rowspan="2">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>RX mode</td><td>0: Auto RX mode
1: Manual RX mode</td><td>0</td></tr>
<tr><td>5</td><td>Footer</td><td>0: Off
1: On - Print footer information at each of received page</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">Reserved</td><td rowspan="4">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

- Bit 5: The footer shows machine number, receiving time, remote side TSI number, session and page number. The details show on the report specification.

12.3.48 SOFT SWITCH: #48

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td>Activity report</td><td>0: No
1: Yes</td><td>1</td><td rowspan="4">A</td></tr>
<tr><td>7</td><td rowspan="2">TX Result Report</td><td rowspan="2"><table><tr><td>Description</td><td>ON</td><td>ON (Error)</td><td>OFF</td><td>Reserved</td></tr><tr><td>Bit No. 7</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 6</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>6</td><td>1</td></tr>
<tr><td>5</td><td rowspan="2">RX Result Report</td><td rowspan="2"><table><tr><td>Description</td><td>ON</td><td>ON (Error)</td><td>OFF</td><td>Reserved</td></tr><tr><td>Bit No. 5</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit No. 4</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table></td><td>0</td></tr>
<tr><td>4</td><td>1</td><td rowspan="4">8</td></tr>
<tr><td>3</td><td>Error report for I-FAX and Network scanner</td><td>0: No
1: Yes</td><td>0</td></tr>
<tr><td>2</td><td>If machine receive error Mail (I-FAX), the mail is deleted or kept?</td><td>0: Delete
1: Keep</td><td>0</td></tr>
<tr><td>1</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
</table>

- If resetting (Delete), the mail will be deleted on POP3 server. If setting (Keep), the mail will be kept on POP3 server.

12.3.49 SOFT SWITCH: #49

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6	Print RX Mailbox Report method	**0: Base on RX RESULT REPORT setting** 1: Always printing	0	
5	Re-dial method if Comm. Fail	**0: Re-dial again** 1: Base on re-dial time interval	0	
4	No. of rings	(see tables below)	0	1
3			0	
2			0	
1			1	

No. of rings	1	**2**	3	4	5	6	7	8
Bit No. 4	0	**0**	0	0	0	0	0	0
Bit No. 3	0	**0**	0	0	1	1	1	1
Bit No. 2	0	**0**	1	1	0	0	1	1
Bit No. 1	0	**1**	0	1	0	1	0	1

No. of rings	9	10	11	12	13	14	15	16
Bit No. 4	1	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1

12.3.50 SOFT SWITCH: #50

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Transmit or cancel after time out in “Memory TX”	**0: Cancel and print out report** 1: Transmission	0	0
7	Reserved	Reserved	0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

- Bit 8: Can select cancel this job and print out report or start to send in case of time when memory full condition occurs

12.3.51 SOFT SWITCH: #51

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="4">Reserved</td><td rowspan="4">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="2">T30 monitor report selection</td><td rowspan="2"><table>
<tr><td>Description</td><td>Not to print</td><td>Print report for each transaction</td><td>Print report while reporting error</td><td>Not used</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table></td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>Send unsent page mode for memory transmission</td><td>0: From error page
1: from start page</td><td>0</td></tr>
<tr><td>1</td><td>Reserved</td><td>Reserved</td><td>0</td></tr>
</table>

12.3.52 SOFT SWITCH: #52

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="8">Reserved</td><td rowspan="8">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>3</td><td>0</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>0</td></tr>
</table>

12.3.53 SOFT SWITCH: #53

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

12.3.54 SOFT SWITCH: #54

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Report Date/Time type	0: Digits format **1: Alpha numeric format**	1	A
7	Report Date/Time format	When bit No.8 is "1". Date/Time: 2006. MAR. 25 / **MAR. 25. 2006** / 25. MAR. 2006 Bit No. 7: 0 / **0** / 1 Bit No. 6: 0 / **1** / 0 When bit No.8 is "0". Date/Time: 2006. 11. 25 / 25. 11. 2006 / **11. 25. 2006** Bit No. 7: 0 / 0 / **1** Bit No. 6: 0 / 1 / **0**	0	
6			1	
5	Memory near full capacity for B/W scanning	Description (KB): 256 / **512** / 1024 / 1536 Bit No. 5: 0 / **0** / 1 / 1 Bit No. 4: 0 / **1** / 0 / 1	0	
4			1	8
3	Memory near full capacity for Color/Gray scanning	Description (KB): **512** / 1024 / 2512 / 5024 Bit No. 3: **0** / 0 / 1 / 1 Bit No. 2: **0** / 1 / 0 / 1	0	
2			0	
1	Reserved	Reserved	0	

Bit No.8 = "1":

Date/Time	2006. MAR. 25	**MAR. 25. 2006**	25. MAR. 2006
Bit No. 7	0	**0**	1
Bit No. 6	0	**1**	0

Bit No.8 = "0":

Date/Time	2006. 11. 25	25. 11. 2006	**11. 25. 2006**
Bit No. 7	0	0	**1**
Bit No. 6	0	1	**0**

Description (KB)	256	**512**	1024	1536
Bit No. 5	0	**0**	1	1
Bit No. 4	0	**1**	0	1

Description (KB)	**512**	1024	2512	5024
Bit No. 3	**0**	0	1	1
Bit No. 2	**0**	1	0	1

12.3.55 SOFT SWITCH: #55

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

12.3.56 SOFT SWITCH: #56

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

12.3.57 SOFT SWITCH: #57

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

12.3.58 SOFT SWITCH: #58

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Time out from PSK to FSK delay time	**0: 6 sec.** 1: 30 sec.	0	0
7	Reserved	Reserved	0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

- Bit 8: This is the delay time for PSK signal after sending MCF or PPR command. The timer depends on each country regulation.

12.3.59 SOFT SWITCH: #59 (Part 1)

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6	Time Between GMT (Greenwich Mean Time)	(see tables below)	0	
5			0	
4			0	0
3			0	
2			0	
1			0	

Time between mean time	Greenwich mean time + T			
	+00:00	+00:30	+01:00	+01:30
Bit No. 6	**0**	0	0	0
Bit No. 5	**0**	0	0	0
Bit No. 4	**0**	0	0	0
Bit No. 3	**0**	0	0	0
Bit No. 2	**0**	0	1	1
Bit No. 1	**0**	1	0	1

Time between mean time	Greenwich mean time + T			
	+02:00	+02:30	+03:00	+03:30
Bit No. 6	0	0	0	0
Bit No. 5	0	0	0	0
Bit No. 4	0	0	0	0
Bit No. 3	1	1	1	1
Bit No. 2	0	0	1	1
Bit No. 1	0	1	0	1

Time between mean time	Greenwich mean time + T			
	+04:00	+04:30	+05:00	+05:30
Bit No. 6	0	0	0	0
Bit No. 5	0	0	0	0
Bit No. 4	1	1	1	1
Bit No. 3	0	0	0	0
Bit No. 2	0	0	1	1
Bit No. 1	0	1	0	1

Time between mean time	Greenwich mean time + T			
	+06:00	+06:30	+07:00	+07:30
Bit No. 6	0	0	0	0
Bit No. 5	0	0	0	0
Bit No. 4	1	1	1	1
Bit No. 3	1	1	1	1
Bit No. 2	0	0	1	1
Bit No. 1	0	1	0	1

Time between mean time	Greenwich mean time + T			
	+08:00	+08:30	+09:00	+09:30
Bit No. 6	0	0	0	0
Bit No. 5	1	1	1	1
Bit No. 4	0	0	0	0
Bit No. 3	0	0	0	0
Bit No. 2	0	0	1	1
Bit No. 1	0	1	0	1

12.3.60 SOFT SWITCH: #59 (Part 2)

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>6</td><td rowspan="6">Time Between GMT (Greenwich Mean Time)</td><td rowspan="6">
<table>
<tr><td rowspan="2">Time between mean time</td><td colspan="4">Greenwich mean time + T</td></tr>
<tr><td>+10:00</td><td>+10:30</td><td>+11:00</td><td>+11:30</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 5</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td rowspan="2">Time between mean time</td><td colspan="4">Greenwich mean time + T</td></tr>
<tr><td>+12:00</td><td>-00:30</td><td>-01:00</td><td>-01:30</td></tr>
<tr><td>Bit No. 6</td><td>0</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>1</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td rowspan="2">Time between mean time</td><td colspan="4">Greenwich mean time + T</td></tr>
<tr><td>-02:00</td><td>-02:30</td><td>-03:00</td><td>-03:30</td></tr>
<tr><td>Bit No. 6</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td rowspan="2">Time between mean time</td><td colspan="4">Greenwich mean time + T</td></tr>
<tr><td>-04:00</td><td>-04:30</td><td>-05:00</td><td>-05:30</td></tr>
<tr><td>Bit No. 6</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td rowspan="2">Time between mean time</td><td colspan="4">Greenwich mean time + T</td></tr>
<tr><td>-06:00</td><td>-06:30</td><td>-07:00</td><td>-07:30</td></tr>
<tr><td>Bit No. 6</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>0</td><td rowspan="2"></td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="4">5</td></tr>
<tr><td>3</td><td>1</td></tr>
<tr><td>2</td><td>0</td></tr>
<tr><td>1</td><td>1</td></tr>
</table>

12.3.61 SOFT SWITCH: #59 (Part 3)

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
6	Time Between GMT (Greenwich Mean Time)	(see tables below)	0	
5			0	
4			0	5
3			1	
2			0	
1			1	

Time between mean time	Greenwich mean time + T			
	-08:00	-08:30	-09:00	-09:30
Bit No. 6	1	1	1	1
Bit No. 5	1	1	1	1
Bit No. 4	0	0	0	0
Bit No. 3	0	0	0	0
Bit No. 2	0	0	1	1
Bit No. 1	0	1	0	1

Time between mean time	Greenwich mean time + T			
	-10:00	-10:30	-11:00	-11:30
Bit No. 6	1	1	1	1
Bit No. 5	1	1	1	1
Bit No. 4	0	0	0	0
Bit No. 3	1	1	1	1
Bit No. 2	0	0	1	1
Bit No. 1	0	1	0	1

Time between mean time	Greenwich mean time + T							
	-12:00	Reserved						
Bit No. 6	1	1	1	1	1	1	1	1
Bit No. 5	1	1	1	1	1	1	1	1
Bit No. 4	1	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1

- Bit1-6: This value must be entered correctly, or E-mail headers will be wrong. A good reference web site may be found at http://greenwichmeantime.com
  Available ranges are:12 to -12, in one hour increments. The default setting is zero.

12.3.62 SOFT SWITCH: #60

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="5">Reserved</td><td rowspan="5">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td>0</td><td rowspan="7">0</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Print mailbox RX image even password are not correct</td><td>0: No</td><td rowspan="2">0</td></tr>
<tr><td>1: Yes</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">Off hook alarm after communication</td><td>0: Alarm</td><td rowspan="2">0</td></tr>
<tr><td>1: Not alarm after communication</td></tr>
<tr><td rowspan="2">1</td><td rowspan="2">Display destination selection within TX phase C</td><td>0: Local Name or telephone number</td><td rowspan="2">0</td></tr>
<tr><td>1: Remote telephone number</td></tr>
</table>

- Bit 3: If bit 3 set to “1”, machine will print out the incoming page even through password is not correct.

12.3.63 SOFT SWITCH: #61

<table>
<tr><th rowspan="2">Bit No.</th><th rowspan="2">Designation</th><th rowspan="2">Function</th><th colspan="2">Initial Setting</th></tr>
<tr><th>Bit</th><th>HEX</th></tr>
<tr><td>8</td><td rowspan="4">Reserved</td><td rowspan="4">Reserved</td><td>0</td><td rowspan="4">0</td></tr>
<tr><td>7</td><td>0</td></tr>
<tr><td>6</td><td>0</td></tr>
<tr><td>5</td><td>0</td></tr>
<tr><td>4</td><td rowspan="4">Max. No. of ring</td><td rowspan="4">
<table>
<tr><td>No. of rings</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td>Bit No. 4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
<table>
<tr><td>No. of rings</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr>
<tr><td>Bit No. 4</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Bit No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
</table>
</td><td>1</td><td rowspan="4">F</td></tr>
<tr><td>3</td><td>1</td></tr>
<tr><td>2</td><td>1</td></tr>
<tr><td>1</td><td>1</td></tr>
</table>

12.3.64 SOFT SWITCH: #62

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

12.3.65 SOFT SWITCH: #63

Bit No.	Designation	Function	Initial Setting Bit	Initial Setting HEX
8	"#" key definition in PBX mode	**1: "#" is external key, machine (PBX) default is internal**	1	8
		0: "#" is internal key, machine (PSTN) default is external		
7	Reserved	Reserved	0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1	TX result report with image	**0: Yes**	0	
		1: No		

- Bit 8: If this bit set to 1, the # key is use to access PSTN line after dial the pre-fix number
  If this bit set to 0, the # key is use to access PBX line instead of PSTN line
- Bit 1: This bit set to "1", the first page image will not append at the bottom of error report or OK report

12.3.66 SOFT SWITCH: #64

Bit No.	Designation	Function	Initial Setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6	Print RX error report In RX side if no any FAX signal detected	**0: No**	0	
		1: Yes		
5	10 PPS & 20 PPS Selectable by User	**0: No**	0	
		1: Yes		
4	Reserved	Reserved	0	0
3			0	
2			0	
1			0	

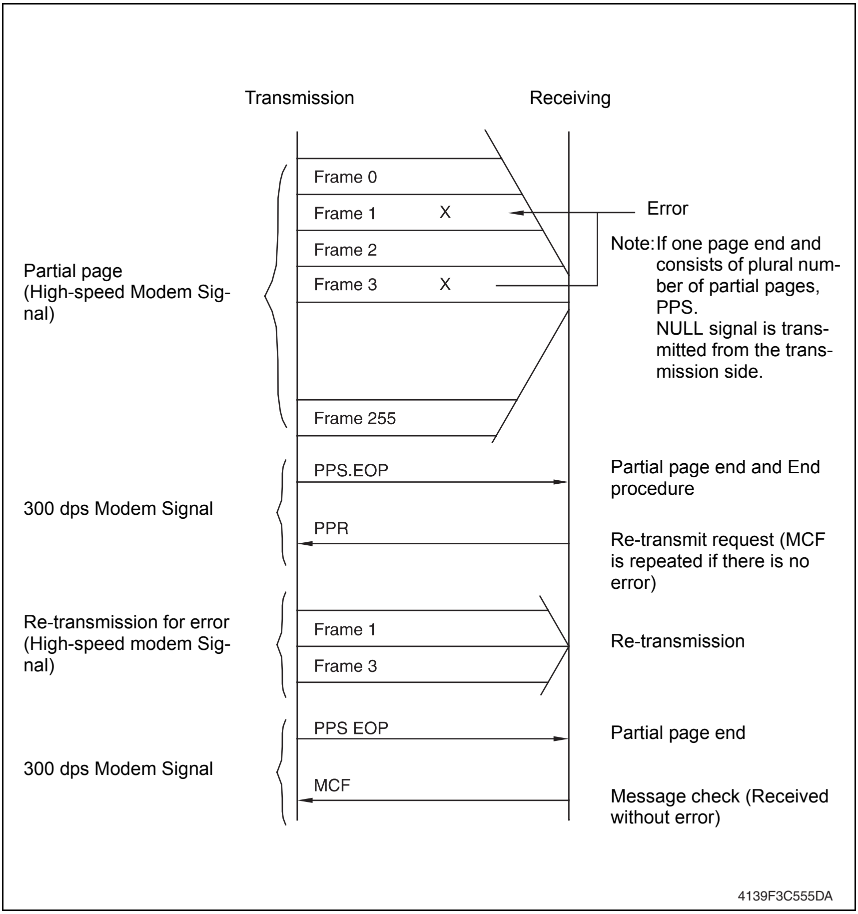
- Bit 6: If this bit set to 1, Machine does not print put RX error report if no detect any Fax signal from the other party.
- Bit 5: Can not open by user to change PPS if this bit set to “0”.

13. Fax Protocols

13.1 G3 ECM (G3 Error Correction Mode)

- G3 ECM is the error correction system newly recommended by consultative committee of International telephone & telegraph of 1988.
- By G3 ECM, documents are divided into blocks (called partial page) for transmission. If any error takes place in any frame (one partial page consists of 256 frames) on a partial page, the receiving party generates the retransmit request with erroneous frame numbers.

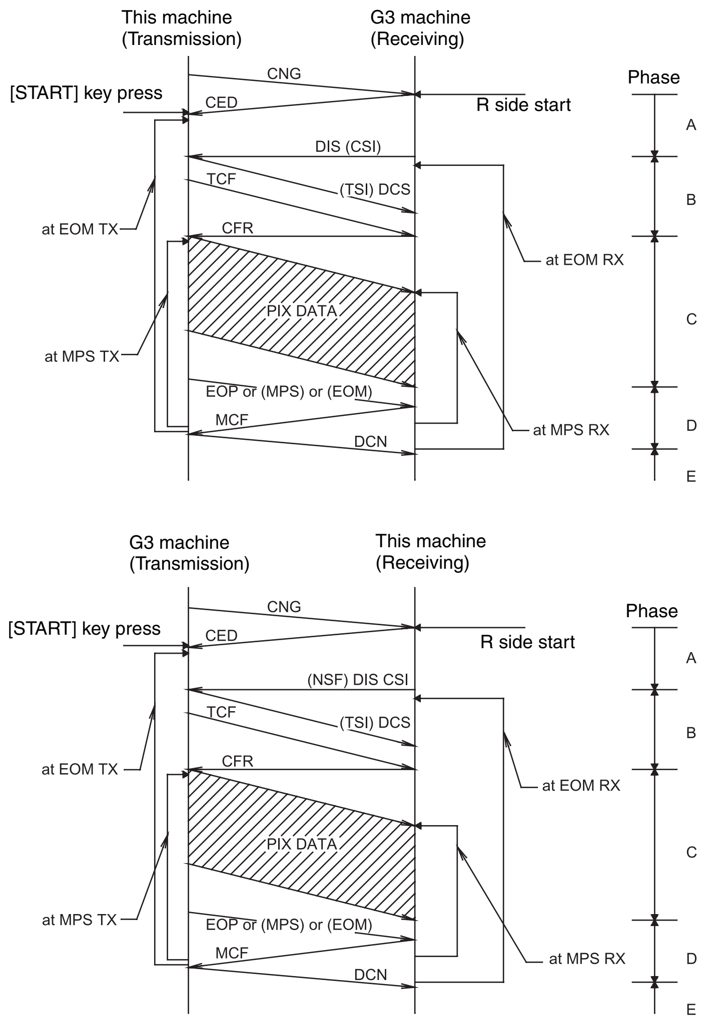
Here is an example where frame 1 and frame 3 are subjected to error:



13.2 Line control

13.2.1 Procedure of G3 mode communication

- Basic communications diagram of G3 mode.



Drawing: Line Control

4139F3C556DA

13.3 Table of reference code

Code	Function
CFR	Confirmation to Receive. 1850 Hz or 1650 Hz 3 sec.
CIG	Calling Station Identification.
CRP	Command Repeat.
CSI	Called Subscriber Identification.
DCN	Disconnect.
DCS	Digital Identification Signal.
DIS	Digital Transmit Command.
DTC	Digital Transmit Command.
EOM	End of Message. 1,100 Hz.
EOP	End of Procedure.
FTT	Failure to Train.
MCF	Message Confirmation. 1,650 Hz or 1,850 Hz.
MPS	Multi-Page Signal.
NCS	Non-Standard Facilities Command.
NCF	Non-Standard Facilities.
NSS	Non-Standard Facilities Set-up.
PIN	Procedural Interrupt Negative.
PIP	Procedural Interrupt Positive.
PRI-EOM	Procedure Interrupt-End of Message (COM).
PRI-MPS	Procedure Interrupt-Multi page Signal (MPS).
PRI-EOP	Procedure Interrupt-End of Procedure (EOP).
RTN	Retrain Negative.
RTP	Retrain Positive.
TSI	Transmitting Station Identification.

13.4 How to analyze the T30 protocol monitor

- DCS or DIS
- HEX Data as printed on page.
  See P.144
- Example: V.17 Communication

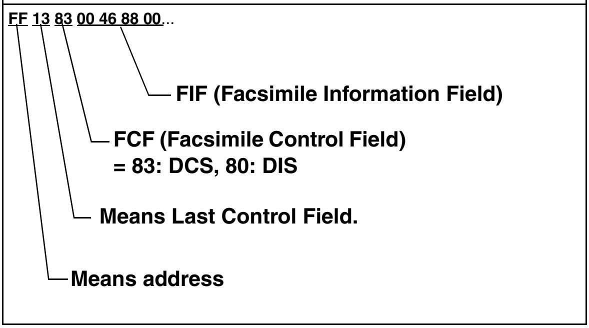
PROTOCOL MONITOR REPORT

NAME: ABC
TEL:886 3 4733507
DATE: APR.23'04 12:20

SESSION	FUNCTION	NO	DESTINATION STATION	DATE	TIME	PAGE	DURATION	MODE	RESULT
0001	TX	01	ABC 22345678901234567890	DEC.02	15:00	008	00h00min00s	ECM-12	OK

TX	RX

DATA



- FIF (Facsimile Information Field)

HEX	1																2															
	0				0				4				6				8				8				0				0			
Data Bit	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Bit No.	8	7	6	5	4	3	2	1	16	15	14	13	12	11	10	9	24	23	22	21	20	19	18	19	32	31	30	29	28	27	26	25
										↑			↑	↑							↑	↑										
Note	Bit No.11= 1, Bit No.12=0 7200 bps Bit No.15= 1 R8 x 7.7 Lines/mm (Fine Mode) Bit No.19= 0, Bit No.20=1 Unlimited Paper Length																															

- Hex-Binary Conversion List

Hex	Binary				Hex	Binary				Hex	Binary				Hex	Binary			
0	0	0	0	0	4	0	1	0	0	8	1	0	0	0	C	1	1	0	0
1	0	0	0	1	5	0	1	0	1	9	1	0	0	1	D	1	1	0	1
2	0	0	1	0	6	0	1	1	0	A	1	0	1	0	E	1	1	1	0
3	0	0	1	1	7	0	1	1	1	B	1	0	1	1	F	1	1	1	1

DIS (DTC) / DCS Bit Allocation Table of FIF (Facsimile Information Field)

<table>
<tr><th>Bit No.</th><th>Designation</th><th>DIS/DTC</th><th>DCS</th></tr>
<tr><td>1</td><td colspan="3">“0”= Invalid
“1”= Store-and-forward switching Internet fax simple mode</td></tr>
<tr><td>2</td><td colspan="3">Set to “0”</td></tr>
<tr><td>3</td><td colspan="3">“0”= Invalid
“1”= Real-time Internet fax</td></tr>
<tr><td>4</td><td colspan="3">Set to “0”</td></tr>
<tr><td>5</td><td colspan="3">Set to “0”</td></tr>
<tr><td>6</td><td colspan="2">“0”= Invalid
“1”= V.8 capabilities</td><td>Invalid</td></tr>
<tr><td>7</td><td>Flame size</td><td>“0” = 256 octets preferred
“1”= 64 octets preferred</td><td>Invalid</td></tr>
<tr><td>8</td><td colspan="3">Set to “0”</td></tr>
<tr><td>9</td><td colspan="2">“0”= Invalid
“1”= Ready to transmit a facsimile document (polling)</td><td>Set to “0”</td></tr>
<tr><td>10</td><td colspan="3">“0”= Invalid
“1”= Receiver fax operation</td></tr>
<tr><td>11
12
13
14</td><td>Data signalling rate</td><td>
<table>
<tr><th colspan="4">Bit No.</th><th rowspan="2">Data signalling rate</th></tr>
<tr><th>14</th><th>13</th><th>12</th><th>11</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>V.27 ter fall-back mode</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>Rec. V.29</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>Rec. V.27 ter</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>Rec. V.27 ter and V.29</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>0</td><td>Not used</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>1</td><td>Not used</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>0</td><td>Reserved</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>1</td><td>Reserved</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>0</td><td>Not used</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>1</td><td>Not used</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>0</td><td>Reserved</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>1</td><td>Rec. V.27 ter, V.29, V33 and V.17</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>0</td><td>Not used</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>1</td><td>Not used</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>0</td><td>Reserved</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>1</td><td>Reserved</td></tr>
</table>
</td><td>
<table>
<tr><th colspan="4">Bit No.</th><th rowspan="2">Data signalling rate</th></tr>
<tr><th>14</th><th>13</th><th>12</th><th>11</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>2400 bit/s, rec. V.27ter</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>9600 bit/s, rec. V.29</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>4800 bit/s, rec. V.27ter</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>7200 bit/s, rec. V.29</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>0</td><td>Invalid</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>1</td><td>Reserved</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>0</td><td>Invalid</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>1</td><td>Reserved</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>0</td><td>14,400 bit/s, rec. V.17</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>1</td><td>9,600 bit/s, rec. V.17</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>0</td><td>12,000 bit/s, rec. V.17</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>1</td><td>7,200 bit/s, rec. V.17</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>0</td><td>Reserved</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>1</td><td>Reserved</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>0</td><td>Reserved</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>1</td><td>Reserved</td></tr>
</table>
</td></tr>
<tr><td>15</td><td colspan="3">“0”= Invalid
“1”= R8 × 7.7 lines/mm and/or 200 × 200 pels/25.4 mm</td></tr>
<tr><td>16</td><td colspan="2">“0”= Invalid
“1”= Two-dimensional coding capability</td><td>“0”= Invalid
“1”= Two-dimensional coding</td></tr>
</table>

<table>
<tr><th>Bit No.</th><th>Designation</th><th>DIS/DTC</th><th>DCS</th></tr>
<tr><td>17
18</td><td>Recording width capabilities</td><td>
<table>
<tr><th colspan="2">Bit No.</th><th rowspan="2">Data signalling rate</th></tr>
<tr><th>18</th><th>17</th></tr>
<tr><td>0</td><td>0</td><td>Scan line length 215 mm ± 1%</td></tr>
<tr><td>0</td><td>1</td><td>Scan line length 215 mm ± 1%
and scan line length 255 mm ± 1%</td></tr>
<tr><td>1</td><td>0</td><td>Scan line length 215 mm ± 1%
and scan line length 255 mm ± 1%
and scan line length 303 mm ± 1%</td></tr>
<tr><td>1</td><td>1</td><td>Invalid</td></tr>
</table>
</td><td>
<table>
<tr><th colspan="2">Bit No.</th><th rowspan="2">Data signalling rate</th></tr>
<tr><th>18</th><th>17</th></tr>
<tr><td>0</td><td>0</td><td>Scan line length 215 mm ± 1%</td></tr>
<tr><td>0</td><td>1</td><td>Scan line length 255 mm ± 1%</td></tr>
<tr><td>1</td><td>0</td><td>Scan line length 303 mm ± 1%</td></tr>
<tr><td>1</td><td>1</td><td>Invalid</td></tr>
</table>
</td></tr>
<tr><td>19
20</td><td>Recording length capability</td><td>
<table>
<tr><th colspan="2">Bit No.</th><th rowspan="2">Recording length capability</th></tr>
<tr><th>20</th><th>19</th></tr>
<tr><td>0</td><td>0</td><td>A4 (297 mm)</td></tr>
<tr><td>0</td><td>1</td><td>A4 (297 mm) and B4 (364 mm)</td></tr>
<tr><td>1</td><td>0</td><td>Unlimited</td></tr>
<tr><td>1</td><td>1</td><td>Invalid</td></tr>
</table>
</td><td>
<table>
<tr><th colspan="2">Bit No.</th><th rowspan="2">Recording length capability</th></tr>
<tr><th>20</th><th>19</th></tr>
<tr><td>0</td><td>0</td><td>A4 (297 mm)</td></tr>
<tr><td>0</td><td>1</td><td>B4 (364 mm)</td></tr>
<tr><td>1</td><td>0</td><td>Unlimited</td></tr>
<tr><td>1</td><td>1</td><td>Invalid</td></tr>
</table>
</td></tr>
<tr><td>21
22
23</td><td colspan="2">
<table>
<tr><th colspan="3">Bit No.</th><th rowspan="2">Minimum scan line time capability at the receive</th></tr>
<tr><th>23</th><th>22</th><th>21</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>20 ms at 3.85 1/mm: T 7.7 = T 3.85 20 ms</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>5 ms at 3.85 1/mm: T 7.7 = T 3.85</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>10 ms at 3.85 1/mm: T 7.7 = T 3.85 10 ms</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>20 ms at 3.85 1/mm: T 7.7 = 1/2 T 3.85</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>40 ms at 3.85 1/mm: T 7.7 = T 3.85 40 ms</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>40 ms at 3.85 1/mm: T 7.7 = 1/2 T 3.85</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>10 ms at 3.85 1/mm: T 7.7 = 1/2 T 3.85</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>0 ms at 3.85 1/mm: T 7.7 = T 3.85</td></tr>
</table>
</td><td>
<table>
<tr><th colspan="3">Bit No.</th><th rowspan="2">Minimum scan line time</th></tr>
<tr><th>23</th><th>22</th><th>21</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>20 ms</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>5 ms</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>10 ms</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>40 ms</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>0 ms</td></tr>
</table>
</td></tr>
<tr><td>24</td><td>Extension field</td><td colspan="2">“0”= Without
“1”= With</td></tr>
<tr><td>25</td><td colspan="3">Reserved</td></tr>
<tr><td>26</td><td colspan="3">“0”= Invalid
“1”= Un-compressed mode</td></tr>
<tr><td>27</td><td colspan="3">“0”= Invalid
“1”= ECM</td></tr>
<tr><td>28</td><td colspan="2">Set to “0”</td><td>Frame size 0: 256 octets
Frame size 1: 64 octets</td></tr>
<tr><td>29</td><td colspan="3">Set to “0”</td></tr>
<tr><td>30</td><td colspan="3">Set to “0”</td></tr>
</table>

Bit No.	Designation	DIS/DTC	DCS
31	"0"= Invalid "1"= T.6 coding capability		"0"= Invalid "1"= T.6 coding enabled
32	Extend field	"0"= Without "1"= With	
33	"0"= Invalid "1"= Field not valid capability		
34	"0"= Invalid "1"= Multiple selective polling capability		Set to "0"
35	"0"= Invalid "1"= Polling sub address transmission (DTC) by Polled Sub Address (DIS)/PSA		Set to "0"
36	"0"= Invalid "1"= T.43 coding		
37	"0"= Invalid "1"= Plane interleave		
38	Set to "0"		
39	Set to "0"		
40	Extend field	"0"= Without "1"= With	
41	"0"= Invalid "1"= R8 x 15.4 lines/mm		
42	"0"= Invalid "1"= 300 x 300 pels/25.4 mm		
43	"0"= Invalid "1"= R16 x 15.4 lines/mm and/or 400 x 400 pels/25.4 mm		
44	"0"= Invalid "1"= Inch based resolution preferred		Resolution type selection "0"= metric based resolution "1"= inch based resolution
45	"0"= Invalid "1"= Metric based resolution preferred		Do not care
46	Minimum scan line time capability for higher resolutions.	"0": T 15.4 = T 7.7 "1": T 15.4 = 1/2 T 7.7	Do not care
47	"0"= Invalid "1"= Selective polling (DIS)/ Selective polling transmission (DTC)		Set to "0"
48	Extend field	0: Without 1: With	
49	"0"= Invalid "1"= Sub Addressing capability		"0"= Invalid "1"= Sub Addressing transmission
50	"0"= Invalid "1"= Password/ Sender Identification capability (DIS)/ Password transmission (DTC)		"0"= Invalid "1"= Sender Identification transmis-sion
51	"0"= Invalid "1"= Ready to transmit a data file (polling)		Set to "0"
52	Set to "0"		
53	"0"= Invalid "1"= Binary File Transfer (BFT)		

Bit No.	Designation	DIS/DTC	DCS
54	"0"= Invalid "1"= Document Transfer Mode (DTM)		
55	"0"= Invalid "1"= EDIFACT Transfer (EDI)		
56	Extend field	0: Without 1: With	
57	"0"= Invalid "1"= Basic Transfer Mode (BTM)		
58	Set to "0"		
59	"0"= Invalid "1"= Ready to transmit a character or mixed mode document (polling)		Set to "0"
60	"0"= Invalid "1"= Character mode		
61	Set to "0"		
62	"0"= Invalid "1"= Mixed mode		
63	Set to "0"		
64	Extend field	"0"= Without "1"= With	
65	"0"= Invalid "1"= Processable mode 26		
66	"0"= Invalid "1"= Digital network capability		
67	Duplex and half duplex capabilities	"0"= Half duplex operation only "1"= Duplex and half duplex operation	"0"= Half duplex operation only "1"= Duplex operation
68	"0"= Invalid "1"= JPEG coding		
69	"0"= Invalid "1"= Full color mode		
70	Set to "0"		"0"= Invalid "1"= Preferred Huffmann tables
71	"0"= Invalid "1"= 12 bit/pixel/element		
72	Extend field	"0"= Without "1"= With	
73	"0"= Invalid "1"= No sampling (1:1:1)		
74	"0"= Invalid "1"= Nonstandard radiation light		
75	"0"= Invalid "1"= Nonstandard is mute range		
76	"0"= Invalid "1"= North American Letter (215.9 mm × 279.4 mm) capacity		"0"= Invalid "1"= North American Letter (215.9 mm × 279.4 mm)

Bit No.	Designation	DIS/DTC	DCS
77	"0"= Invalid "1"= North American Legal (215.9 mm × 355.6 mm) capacity		"0"= Invalid "1"= North American Legal (215.9 mm × 355.6 mm)
78	"0"= Invalid "1"= Single layer sequential encoding, basic capacity		"0"= Invalid "1"= Single layer sequential encoding, basic
79	"0"= Invalid "1"= Single layer sequential encoding, optional L0 capacity		
80	Extend field	"0"= Without "1"= With	
81	"0"= Invalid "1"= HKM key management capacity		"0"= Invalid "1"= HKM key management selection
82	"0"= Invalid "1"= RSA key management capacity		"0"= Invalid "1"= RSA key management selection
83	"0"= Invalid "1"= Override mode capacity		"0"= Invalid "1"= Override mode function
84	"0"= Invalid "1"= HFX40 code capacity		"0"= Invalid "1"= HFX40 code selection
85	"0"= Invalid "1"= Alternative code number 2 capacity		"0"= Invalid "1"= Alternative code number 2 selection
86	"0"= Invalid "1"= Alternative code number 3 capacity		"0"= Invalid "1"= Alternative code number 3 selection
87	"0"= Invalid "1"= HFX40-1 hashing capacity		"0"= Invalid "1"= HFX40-1 hashing selection
88	Extend field	"0"= Without "1"= With	
89	"0"= Invalid "1"= Alternative hashing system number 2 capacity		"0"= Invalid "1"= Alternative hashing system number 2 selection
90	"0"= Invalid "1"= Alternative hashing system number 3 capacity		"0"= Invalid "1"= Alternative hashing system number 3 selection
91	Reserved		
92	"0"= Invalid "1"= T.44 (Mixed raster content) mode		
93	"0"= Invalid "1"= T.44 (Mixed raster content) mode		
94	"0"= Invalid "1"= T.44 (Mixed raster content) mode		
95	"0"= Invalid "1"= Page length maximum strip size for T.44 (Mixed raster content)		
96	Extend field	"0"= Without "1"= With	

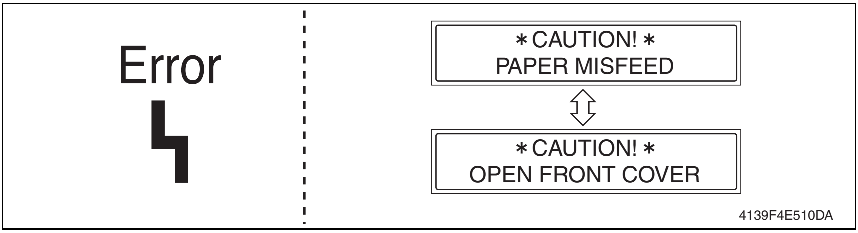
Bit No.	Designation	DIS/DTC	DCS
97	"0"= Invalid "1"= Color/mono-color multi-value 300 pixels x 300 pixels or 400 pixels x 400 pixels / 25.4 mm		
98	"0"= Invalid "1"= R4 x 3.85 lines/mm and/or 100 pixels x 100 pixels / 25.4 mm for color/mono-color multi-value		
99	"0"= Invalid "1"= Single phase C BFT negotiation capacity		
100	Set to "0"		
101	Set to "0"		
102	Set to "0"		
103	Set to "0"		
104	Extend field	"0"= Without "1"= With	

Troubleshooting

14. Jam display

14.1 Misfeed display

- When a media misfeed occurs, the printer shows the corresponding media misfeed status by means of the Error indicator on the control panel or LCD display.

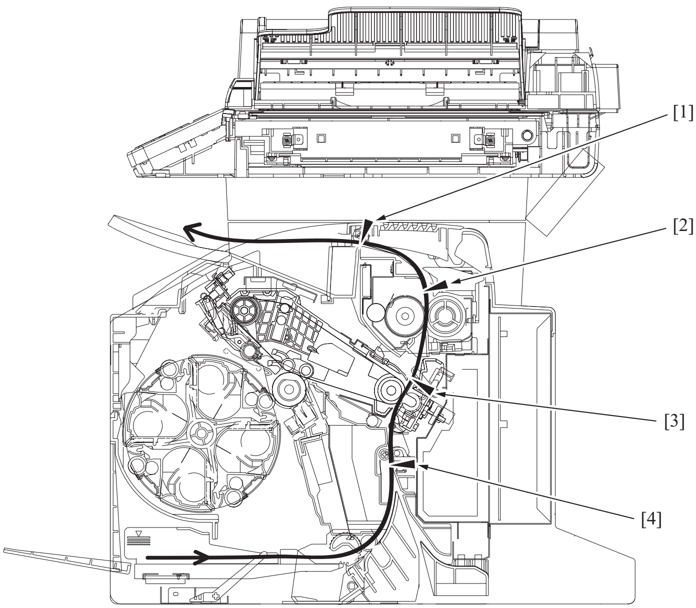


Display	Misfeed Location	Misfeed processing location	Action
CAUTION! PAPER MISFEED ⇳ *CAUTION!* OPEN FRONT COVER	Paper feed section	Top cover, top front cover	P.235
CAUTION! PAPER JAM ⇳ *CAUTION!* OPEN FRONT COVER	Transfer section	Top cover	P.236
	Fusing section	Top cover	P.237
	Exit section	Top cover	P.238
CAUTION! OUTPUT BIN FULL ⇳ *CAUTION!* REMOVE PAPER	Exit section	Exit tray	P.238
CAUTION! ORIGINAL DOC. JAM ⇳ *CAUTION!* OPEN DOC. FEED COVER	Document feeding section	Top cover	Auto Document Feeder Unit Service Manual P.26
	Document transport section		
	Document exit section		
CAUTION! PAPER MISFEED ⇳ *CAUTION!* OPEN FRONT COVER	Lower feeder unit paper feed section	Tray 2	Lower Feeder Unit Service Manual P.13
CAUTION! PAPER JAM ⇳ *CAUTION!* OPEN DUPLEX COVER	Duplex option paper feed section	Duplex option door	Duplex Option Service Manual P.17
	Duplex option paper conveyance section		

14.1.1 Misfeed display resetting procedure

- Open the relevant cover, clear the sheet of misfeed media, and close the cover.

14.2 Sensor layout



[1]	Exit tray full sensor	PS11
[2]	Exit sensor	PS7
[3]	Fusing paper loop sensor	PS8
[4]	Registration sensor	PS1

14.3 Solution

14.3.1 Initial check items

- When a media misfeed occurs, check the following:

Check Item	Action
Does the media meet product specifications?	Change the media.
Is the media curled, wavy, or damp.	Change the media. Instruct the user in correct media storage.
Is a foreign object present along the media path, or is the media path deformed or worn?	Clean or change the media path.
Are the paper separator fingers dirty, deformed, or worn?	Clean or change the defective paper separator finger.
Are the rolls/rollers dirty, deformed, or worn?	Clean or change the defective roll/roller.
Are the edge guide and trailing edge stop at the correct position to accommodate paper?	Set as necessary.
Are the actuators operational?	Correct or change the defective actuator.

14.3.2 Misfeed at paper feed section

A. Detection timing

Type	Description
Detection of misfeed at paper feed section	The leading edge of the paper does not block the registration sensor (PS1) even after the lapse of a predetermined period of time after the tray1 paper pick-up solenoid (SD1) has been energized.

B. Action

Relevant Electrical Parts	
Registration sensor (PS1) Tray1 paper pick-up solenoid (SD1)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Initial check items.	—	—
2	Check the PRCB connector for proper connection and correct as necessary.	—	—
3	PS1 sensor check.	PRCB PJ12PRCB-3 (ON)	J to K-2
4	SD1 operation check.	PRCB PJ18PRCB-18 (REM)	K-4
5	Change PRCB.	—	—

14.3.3 Misfeed at 2nd transfer section

A. Detection timing

Type	Description
Detection of misfeed at 2nd transfer section	The paper does not unblock the registration sensor (PS1) even after the lapse of a predetermined period of time after the registration roller solenoid (SD2) has been deenergized.
	The fusing paper loop sensor (PS8) is not blocked by the paper that has moved past the position, at which the sensor is blocked.
Detection of paper left in 2nd transfer section	The registration sensor (PS1) is blocked when the power switch is turned ON, a cover is opened and closed, or a misfeed or malfunction is reset.
	The fusing paper loop sensor (PS8) is blocked when the power switch is turned ON, a cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant Electrical Parts	
Registration sensor (PS1) Fusing paper loop sensor (PS8) Registration roller solenoid (SD2)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Initial check items.	—	—
2	Check the PRCB connector for proper connection and correct as necessary.	—	—
3	PS1 sensor check.	PRCB PJ12PRCB-3 (ON)	J to K-2
4	PS8 sensor check.	PRCB PJ14PRCB-6 (ON)	J to K-3
5	SD2 operation check.	PRCB PJ11PRCB-4 (REM)	J to K-1
6	Change PRCB.	—	—

14.3.4 Misfeed at fusing section

A. Detection timing

Type	Description
Detection of misfeed at fusing section	The paper does not block the exit sensor (PS7) even after the lapse of a predetermined period of time after the registration roller solenoid (SD2) has been energized.
	The exit sensor (PS7) is unblocked within a predetermined period of time after it has been blocked by the paper.
	The main motor, polygon motor, and rack motor are energized even after the lapse of a predetermined period of time after paper information has been created.
Detection of paper left in fusing section	The exit sensor (PS7) is blocked when the power switch is turned ON, a cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant Electrical Parts	
Exit sensor (PS7) Registration roller solenoid (SD2)	Printer control board (PRCB) Image processing board (IPB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Initial check items.	—	—
2	Check the IPB connector for proper connection and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	PS7 sensor check.	PRCB PJ6PRCB-3 (ON)	C-7
5	SD2 operation check.	PRCB PJ11PRCB-4 (REM)	J to K-1
6	Change IPB.	—	—
7	Change PRCB.	—	—

14.3.5 Misfeed at exit section

A. Detection timing

Type	Description
Detection of misfeed at exit section	The exit sensor (PS7) is not unblocked even after the lapse of a predetermined period of time after it has been blocked by the paper.
	The Paper exit tray full sensor (PS11) is not blocked even after the set period of time has elapsed after the exit sensor (PS7) has been blocked by the paper.
Detection of paper left in exit section	The exit sensor (PS7) is blocked when the power switch is turned ON, a cover is opened and closed, or a misfeed or malfunction is reset.
Detection of paper loaded fully in exit section	The exit tray full sensor (PS11) is blocked when the power switch is turned ON, a cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant Electrical Parts	
Exit sensor (PS7) Exit tray full sensor (PS11)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Initial check items.	—	—
2	Check the PRCB connector for proper connection and correct as necessary.	—	—
3	PS7 sensor check.	PRCB PJ6PRCB-3 (ON)	C-7
4	PS11 sensor check.	PRCB PJ9PRCB-14 (ON)	C-4 to 5
5	SD2 operation check.	PRCB PJ11PRCB-4 (REM)	J to K-1
6	Change PRCB.	—	—

14.3.6 Undefined misfeed

A. Detection timing

Type	Description
Detection of undefined misfeed	Conflicting settings are made in the printer driver.

B. Action

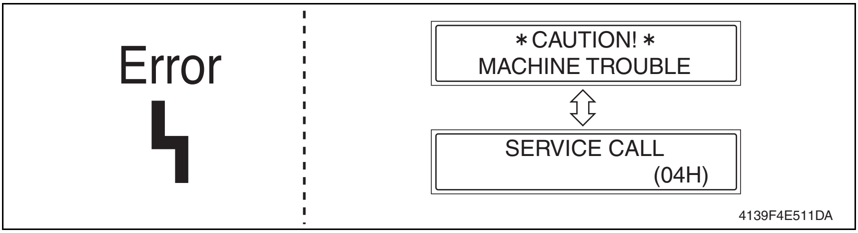
Relevant Electrical Parts	
Image processing board (IPB)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check printer driver settings.	—	—
2	Check the IPB connector for proper connection and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	Change IPB.	—	—
5	Change PRCB.	—	—

15. Error codes

15.1 Trouble display

- The CPU performs a self-diagnosis on the condition of the unit, and if a malfunction is detected, the warning appears alternately with the error code in the display.



15.2 Trouble code list

Code	Item	Detection Timing
04H	Printer control board malfunction	• Communications with the M/C expansion IO G/A (IC on the printer control board) are not properly carried out.
05H	Flash ROM malfunction	• Engine firmware upgrading has failed.
08H	Main motor malfunction	• The motor lock signal remains HIGH for a predetermined consecutive period of time while the main motor remains energized. • The motor lock signal remains LOW for a predetermined consecutive period of time while the main motor remains deenergized.
0BH	Ventilation fan motor malfunction	• The fan motor lock signal remains HIGH for a predetermined consecutive period of time while the ventilation fan motor remains energized.
0CH	Power supply cooling fan motor malfunction	• The fan motor lock signal remains HIGH for a predetermined consecutive period of time while the power supply cooling fan motor remains energized.
0FH	Duplex cooling fan motor malfunction	Duplex Option Service Manual P.19
10H	Polygon motor malfunction	• A low motor lock signal is not detected even after the lapse of a predetermined period of time after the polygon motor has been started. • The motor lock signal remains HIGH for a predetermined consecutive period of time while the polygon motor remains energized.
12H	Laser malfunction	• The SOS signal is not detected within a predetermined period of time after the output of a laser has been started. • The SOS signal is never detected in the image area.

Code	Item	Detection Timing
14H	2nd image transfer pressure /retraction failure	• The state of the retraction position sensor/2nd image transfer is not changed from the unblocked to blocked state even after the lapse of a predetermined period of time during predrive.
		• The retraction position sensor/2nd image transfer is in the unblocked state even after the lapse of a predetermined period of time during predrive.
		• The retraction position sensor/2nd image transfer is not blocked (roller in the retracted position) within a predetermined period of time after the retraction sequence of the 2nd transfer roller has been started.
		• The retraction position sensor/2nd image transfer is not unblocked (roller in the pressed position) within a predetermined period of time after the pressure sequence of the 2nd transfer roller has been started.
15H	Cleaning blade pressure /retraction failure	• The state of the retraction position sensor/cleaning blade is not changed from the blocked to unblocked state even after the lapse of a predetermined period of time during predrive.
		• The retraction position sensor/cleaning blade is in the blocked state even after the lapse of a predetermined period of time during predrive.
		• The retraction position sensor/cleaning blade is not unblocked (blade in the retracted position) within a predetermined period of time after the retraction sequence of the cleaning blade has been started.
		• The retraction position sensor/cleaning blade is not blocked (blade in the pressed position) within a predetermined period of time after the pressure sequence of the cleaning blade has been started.
16H	Transfer belt rotation failure	• The belt positioning sensor does not detect the transfer belt position detection hole a second time even after the lapse of a predetermined period of time after it has detected one while the transfer belt is rotated.
17H	Rack rotation failure	• The rack positioning sensor is in the blocked state when the rack motor remains deenergized.
		• The rack positioning sensor is not blocked a second time even after the lapse of a predetermined period of time after it has been blocked once while the rack motor remains energized.
		• The rack positioning sensor is unable to detect the deceleration control position after the lapse of a given period of time after the rack motor has started while the rack motor is turning.
		• The count value of the edge of ON signal of the rack positioning sensor during each developing positions are not a predetermined value while the rack motor is turning.

Code	Item	Detection Timing
18H	Heating roller warm-up failure	• The thermistor does not detect a predetermined temperature value even after the lapse of a predetermined period of time after the current warm-up cycle has been started and the current warm-up cycle is thus not completed.
19H	Abnormally low heating roller temperature	• The temperature detected by the thermistor remains lower than a predetermined value for a predetermined period of time.
1AH	Abnormally high heating roller temperature	• The temperature detected by the thermistor is a predetermined value or higher for a predetermined period of time.
1BH	Faulty thermistor	• The condition of a temperature rise of less than 1°C extends continuously for a predetermined period of time that begins when the warm-up cycle is started.
21H	Faulty OHP sensor	• It is determined that the OHP sensor is faulty through a check made at the end of the predrive.
23H	Faulty waste toner near full detection board	• It is determined that the LED and photo receiver are faulty through a check made when a new drum cartridge is detected.
24H	Faulty fusing thermistor resistor	• The heater lamp remains ON for a predetermined consecutive period of time.
29H	Trouble related to security	• Contact the responsible people of KONICA MINOLTA when not returning in power switch OFF/ON.
2AH		
2BH		
2CH		
2DH	Trouble related to security	• Re-write the controller firmware. • Contact the responsible people of KONICA MINOLTA when not returning in power switch OFF/ON.
31H	IR cooling fan motor malfunction	• The fan motor lock signal remains HIGH for a predetermined consecutive period of time while the cooling fan motor remains energized.
101H	Scanner motor malfunction	• A low motor lock signal is not detected even after the lapse of a predetermined period of time after the scanner motor has been started.
		• The motor lock signal remains HIGH for a predetermined consecutive period of time while the scanner motor remains energized.
102H	Faulty ir exposure lamp	• The intensity of the light emitted from the exposure lamp of the scanner falls short of the specified value.
F0H	Trouble related to security	• Contact the responsible people of KONICA MINOLTA before taking some countermeasures.
ENGINE INTERFACE	Communication error between engine controller	
CONTROLLER	Controller internal error	

15.3 How to reset

- To reset the printer after a malfunction has occurred, turn the power switch OFF and then ON again.

15.4 Solution

15.4.1 04H: Printer control board malfunction

Relevant Electrical Parts	
Printer control board (PRCB)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the PRCB connector for proper connection and correct as necessary.	—	—
2	Change PRCB.	—	—

15.4.2 05H: Flash ROM malfunction

Relevant Electrical Parts	
Printer control board (PRCB)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the PRCB connector for proper connection and correct as necessary.	—	—
2	Change PRCB.	—	—

15.4.3 08H: Main motor malfunction

Relevant Electrical Parts	
Main motor (M1)	Printer control board (PRCB) DC power supply1 (DCPU1)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the M1 connector for proper connection and correct as necessary.	—	—
2	Check M1 for proper drive coupling and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	M1 operation check.	PRCB PJ8PRCB-5 (REM) PRCB PJ8PRCB-8 (LOCK)	C-4
5	Change PRCB.	—	—
6	Change DCPU1.	—	—

15.4.4 0BH: Ventilation fan motor malfunction

Relevant Electrical Parts	
Ventilation fan motor (FM2)	Printer control board (PRCB) DC power supply1 (DCPU1)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the FM2 connector for proper connection and correct as necessary.	—	—
2	Check FM2 for proper drive coupling and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	FM2 operation check.	PRCB PJ10PRCB-1 (REM) PECB PJ10PRCB-3 (LOCK)	C-4
5	Change PRCB.	—	—
6	Change DCPU1.	—	—

15.4.5 0CH: Power supply cooling fan motor malfunction

Relevant Electrical Parts	
Power supply cooling fan motor (FM1)	Printer control board (PRCB) DC power supply1 (DCPU1)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the FM1 connector for proper connection and correct as necessary.	—	—
2	Check FM1 for proper drive coupling and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	FM1 operation check.	PRCB PJ4PRCB-1 (REM) PRCB PJ4PRCB-3 (LOCK)	C-2
5	Change PRCB.	—	—
6	Change DCPU1.	—	—

15.4.6 10H: Polygon motor malfunction

Relevant Electrical Parts	
PH unit	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the cable and connector for proper connection and correct as necessary.	—	—
2	Change PH unit.	—	—
3	Change PRCB.	—	—

15.4.7 12H: Laser malfunction

Relevant Electrical Parts	
PH unit	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the cable and connector for proper connection and correct as necessary.	—	—
2	Change PH unit.	—	—
3	Change PRCB.	—	—

15.4.8 14h: 2nd image transfer pressure/retraction failure

Relevant Electrical Parts	
Retraction position sensor /2nd image transfer (PS5) Pressure/retraction solenoid /2nd image transfer (SD4) Main motor (M1)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the M1 connector for proper connection and correct as necessary.	—	—
2	Check M1 for proper drive coupling and correct as necessary.	—	—
3	Check the SD4 connector for proper connection and correct as necessary.	—	—
4	Check the PRCB connector for proper connection and correct as necessary.	—	—
5	PS5 sensor check.	PRCB PJ14PRCB-3 (ON)	J to K-3
6	SD4 operation check.	PRCB PJ11PRCB-2 (REM)	J to K-1
7	M1 operation check.	PRCB PJ8PRCB-5 (REM) PRCB PJ8PRCB-8 (LOCK)	C-4
8	Change PRCB.	—	—

15.4.9 15H: Cleaning blade pressure/retraction failure

Relevant Electrical Parts	
Retraction position sensor /cleaning blade (PS6) Pressure/retraction solenoid /cleaning blade (SD3) Main motor (M1)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the M1 connector for proper connection and correct as necessary.	—	—
2	Check M1 for proper drive coupling and correct as necessary.	—	—
3	Check the SD3 connector for proper connection and correct as necessary.	—	—
4	Check the PRCB connector for proper connection and correct as necessary.	—	—
5	PS6 sensor check.	PRCB PJ9PRCB-11 (ON)	C-5
6	SD3 operation check.	PRCB PJ10PRCB-5 (REM)	C-3
7	M1 operation check.	PRCB PJ8PRCB-5 (REM) PRCB PJ8PRCB-8 (LOCK)	C-4
8	Change PRCB.	—	—

15.4.10 16H: Transfer belt rotation failure

Relevant Electrical Parts	
Belt positioning sensor (PS4) Image transfer belt unit	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the PRCB connector for proper connection and correct as necessary.	—	—
2	PS4 sensor check.	PRCB PJ9PRCB-8 (ON)	C-5
3	Change transfer belt unit.	—	—
4	Change PRCB.	—	—

15.4.11 17H: Rack rotation failure

Relevant Electrical Parts	
Rack motor (M2) Rack positioning sensor (PS3)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the M2 connector for proper connection and correct as necessary.	—	—
2	Check M2 for proper drive coupling and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	PS3 sensor check.	PRCB PJ5PRCB-11 (ON)	C-6
5	M2 operation check.	PRCB PJ5PRCB-1 to 4 (Pulse Output)	C-6
6	Change PRCB.	—	—

15.4.12 18H: Heating roller warm-up failure

15.4.13 19H: Abnormally low heating roller temperature

15.4.14 1AH: Abnormally high heating roller temperature

15.4.15 1BH: Faulty thermistor

Relevant Electrical Parts	
Fusing unit	Printer control board (PRCB) DC power supply1 (DCPU1)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the fusing unit for correct installation (whether it is secured in position).	—	—
2	Check the fusing unit, DCPU1, and PRCB for proper connection and correct as necessary.	—	—
3	Check the lever of the safety switch and correct as necessary.	—	—
4	Change the fusing unit.	—	—
5	Change PRCB.	—	—
6	Change DCPU1.	—	—

15.4.16 21H: Faulty OHP sensor

Relevant Electrical Parts	
OHP sensor (PS2)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the PRCB connector for proper connection and correct as necessary.	—	—
2	PS2 sensor check.	PRCB PJ12PRCB-6 (ON)	J to K-1
3	Change PRCB.	—	—

15.4.17 23H: Faulty waste toner near full detection board

Relevant Electrical Parts	
Waste toner near full detect board/LED (WTDTB/LED) Drum cartridge	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the WTDTB/LED connector for proper connection and correct as necessary.	—	—
2	Check the PRCB connector for proper connection and correct as necessary.	—	—
3	Change the drum cartridge.	—	—
4	Change WTDTB/LED.	—	—
5	Change PRCB.	—	—

15.4.18 31H: IR cooling fan motor malfunction

Relevant Electrical Parts	
IR cooling fan motor (FM3) Printer control board (PRCB)	DC power supply1 (DCPU1) DC power supply2 (DCPU2)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the FM3 connector for proper connection and correct as necessary.	—	—
2	Check FM3 for proper drive coupling and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	FM3 operation check.	IPB MPJ1IPB-1 (ON) IPB MPJ1IPB-3 (LOCK)	L-10
5	Change PRCB.	—	—
6	Change DCPU2.	—	—
7	Change DCPU1.	—	—

15.4.19 101H: Scanner motor malfunction

Relevant Electrical Parts	
Scanner motor (M5) Printer control board (PRCB)	DC power supply1 (DCPU1) DC power supply2 (DCPU2)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check to see if the lock lever of the Scanner unit is unlocked and unlock the lock lever if it is locked.	—	—
2	Check the M5 connector for proper connection and correct as necessary.	—	—
3	Check M5 for proper drive coupling and correct as necessary.	—	—
4	Check the PRCB connector for proper connection and correct as necessary.	—	—
5	M5 operation check.	IPB P8IPB-1 to 4 (Pulse Output)	L-11
6	Change PRCB.	—	—
7	Change DCPU2.	—	—
8	Change DCPU1.	—	—

15.4.20 102H: Faulty IR exposure lamp

Relevant Electrical Parts	
Scanner unit	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the exposure lamp for lighting condition when the power switch is turned ON and, if any faulty symptom is evident, correct the Scanner Unit.	—	—
2	Check the PRCB connector for proper connection and correct as necessary.	—	—
3	Change scanner unit.	—	—
4	Change PRCB.	—	—

15.4.21 ENGINE INTERFACE: Communication error between engine controller

Relevant Electrical Parts	
Image processing board (IPB)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the IPB connector for proper connection and correct as necessary.	—	—
2	Check the PRCB connector for proper connection and correct as necessary.	—	—
3	Change IPB.	—	—
4	Change PRCB.	—	—

15.4.22 CONTROLLER: Controller internal error

Relevant Electrical Parts	
Image processing board (IPB)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical component)
1	Check the IPB connector for proper connection and correct as necessary.	—	—
2	Change IPB.	—	—

16. Power supply errors

16.1 Machine is not energized at all (PU operation check)

Relevant Electrical Parts	
Power switch (SW1) Printer control board (PRCB)	DC power supply1 (DCPU1)

Step	Check Item	Location (Electrical component)	Result	Action
1	Is the power source voltage being applied to CN1DCPU1 on DCPU1?	J-6	NO	Check wiring from power outlet to PG1 to CN1.
2	Are fuses (F1 and F2) on DCPU1 conducting?	—	NO	Change DCPU1.
3	Are DC24 V and DC5 V being applied to PJ2PRCB on the PRCB?	G-6	NO	Change DCPU1.
			YES	Change PRCB.

16.2 Control panel indicators do not light

Relevant Electrical Parts	
Image processing board (IPB) Operation board	DC power supply1 (DCPU1)

Step	Check Item	Location (Electrical component)	Result	Action
1	Is the power source voltage being applied to CN1DCPU1 on DCPU1?	J-6	NO	Check wiring from power outlet to PG1 to CN1.
2	Are fuses (F1 and F2) on DCPU1 conducting?	—	NO	Change DCPU1.
3	Is P7IPB on IPB properly connected?	I-10	NO	Reconnect.
4	Is P702 on Operation boad properly connected?	G-10	NO	Reconnect.
			YES	Change Operation boad. Change IPB.

16.3 Fusing heaters do not operate

Relevant Electrical Parts	
Safety switch (SW2) Fusing unit	DC power supply1 (DCPU1)

Step	Check Item	Location (Electrical component)	Result	Action
1	Is the power source voltage being applied to CN1DCPU1 on DCPU1? The top cover and front cover should in closed position at this time.	J-6	NO	Check wiring from power outlet to PG1 to CN1.
2	Is the power source voltage being applied to CN2 on DCPU1?	J-5	YES	Change the fusing unit.
			NO	Change DCPU1.

17. Miscellaneous errors

17.1 How to identify problematic part

- This chapter is divided into two parts: “Initial Check Items” and “Troubleshooting Procedure by a Particular Image Quality Problem.”
- When an image quality problem occurs, first go through the “Initial Check Items” and, if the cause is yet to be identified, go to “Troubleshooting Procedure by a Particular Image Quality Problem.”

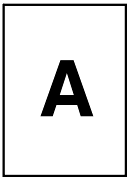
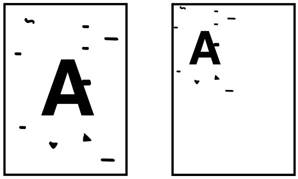
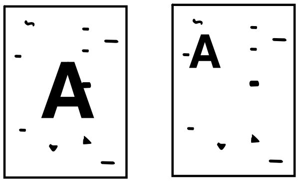
17.1.1 Initial check items 1

- Determine if the failure is attributable to a basic cause or causes.

Section	Step	Check Item	Result	Action
Paper	1	Recommended paper is used.	NO	Instruct user.
	2	Paper is damp.	YES	Replace paper. Instruct user on proper paper storage.
Original	3	Original not flat.	YES	Correct
	4	Faint original (light pencil, etc.)	YES	Instruct user.
	5	Highly transparent original (OHP transparencies, etc.)	YES	Instruct user.
	6	Dirty or scratched original glass.	YES	Clean or Replace.
PM parts	7	PM parts relating to image formation have reached the end of cleaning/replacement cycles.	YES	Clean or Replace.
Adjustment items	8	There are settings that can be readjusted to remedy the image failure.	YES	Readjust.

17.1.2 Initial check items 2

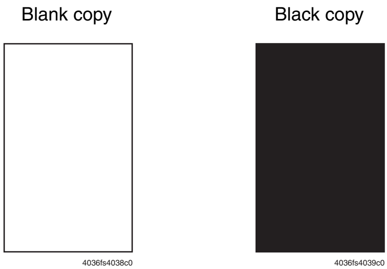
- Determine if the failure is attributable to the scanner system or the printer system.

Check Item	Result	Cause
Make copies at different zoom ratios. 	Full size Reduction 	Scanner system
	Full size Reduction 	Printer system

17.2 Solution

17.2.1 Scanner system: Blank copy or black copy

A. Typical faulty images



B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	PWBs and connection cables	Connectors are securely connected with no bent pins and no breaks in the connection cables.	NO	Reconnect. Replace the connection cable.
2	Scanner unit	The exposure lamp comes on.	NO	Change scanner unit.
3	image processing board	Connectors on the image processing board are connected properly.	NO	Reconnect.
4		The problem has been eliminated after performing step 5.	NO	Change image processing board.

17.2.2 Scanner system: Low image density or rough image

A. Typical faulty images



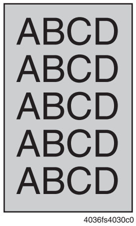
4036fs4036c0

B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Shading sheet	Shading sheet is dirty.	YES	Clean.
2	Mirrors/Lens/ Original glass	Mirrors, lens and/or original glass are dirty.	YES	Clean.
3	Scanner unit	Exposure lamp is dirty.	YES	Clean. Change scanner unit.
4	PWBs and connection cables	Connectors are securely connected with no bent pins and no breaks in the connection cables.	NO	Reconnect. Replace the connection cable.
5	Image processing board	Connectors on the image processing board are connected properly.	NO	Reconnect.
6		The problem has been eliminated after performing step 5.	NO	Change image processing board.

17.2.3 Scanner system: Foggy background

A. Typical faulty images

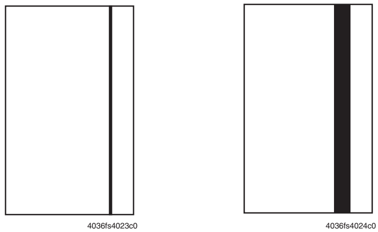


B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	-	Sunlight or any other extraneous light enters the machine.	YES	Protect the copier from extraneous light.
2	Original	Original is damaged or dirty.	YES	Change original.
3	Shading sheet	Shading sheet is dirty.	YES	Clean.
4	Mirrors/Lens/ Original glass	Mirrors, lens and/or original glass are dirty.	YES	Clean.
5	Scanner unit	Exposure lamp is dirty.	YES	Change scanner unit.
6	PWBs and connection cables	Connectors are securely connected with no bent pins and no breaks in the connection cables.	NO	Reconnect. Replace the connection cable.
7	Image processing board	Connectors on the image processing board are connected properly.	NO	Reconnect.
8		The problem has been eliminated after performing step 7.	NO	Change image processing board.

17.2.4 Scanner system: Black streaks or bands

A. Typical faulty images

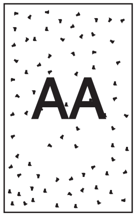


B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Original	Original is damaged or dirty.	YES	Change original.
2	Shading sheet	Shading sheet is dirty.	YES	Clean.
3	Mirrors/Lens/ Original glass	Mirrors, lens and/or original glass are dirty.	YES	Clean.
4	Scanner unit	Exposure lamp is dirty.	YES	Clean. Change scanner unit.
5	PWBs and connection cables	Connectors are securely connected with no bent pins and no breaks in the connection cables.	NO	Reconnect. Replace the connection cable.
6	Image processing board	Connectors on the image processing board are connected properly.	NO	Reconnect.
7		The problem has been eliminated after performing step 6.	NO	Change image processing board.

17.2.5 Scanner system: Black spots

A. Typical faulty images



4036fs4029c0

B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Original	Original is damaged or dirty.	YES	Change original.
2	Original glass	Original glass is dirty.	YES	Clean.
3	-	The problem has been eliminated after performing step 2.	NO	Change scanner unit.

17.2.6 Scanner system: White streaks or bands

A. Typical faulty images



4036fs4021c0



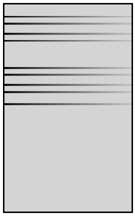
4036fs4022c0

B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Original	Original is damaged or dirty.	YES	Change original.
2	Shading sheet	Shading sheet is dirty.	YES	Clean.
3	Mirrors/Lens/ Original glass	Mirrors, lens and/or original glass are dirty.	YES	Clean.
4	Scanner unit	Exposure lamp is dirty.	YES	Clean. Change scanner unit.

17.2.7 Scanner system: Uneven pitch

A. Typical faulty images



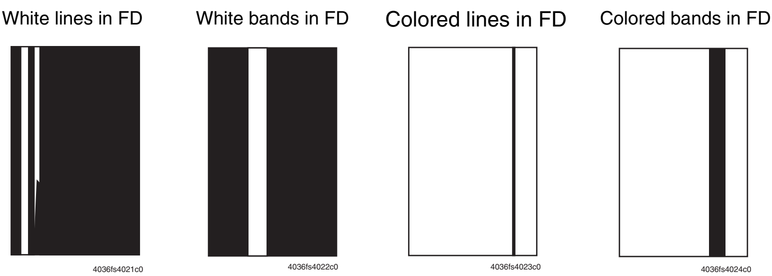
4040F4C500DA

B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Scanner motor	Scanner motor drive is being transmitted.	NO	Correct or change drive coupling mechanism.
2	Scanner unit	Exposure lamp harness is not hooked.	NO	Correct.
3	Scanner rails	Scanner rails are scratched or dirty.	NO	Clean or Change.
4	PWBs and connection cables	Connectors are securely connected with no bent pins and no breaks in the connection cables.	NO	Reconnect. Replace the connection cable.
5	Image processing board	Connectors on the image processing board are connected properly.	NO	Reconnect.
6		The problem has been eliminated after performing step 5.	NO	Change image processing board.

17.2.8 White lines in FD, white bands in FD, colored lines in FD, and colored bands in FD

A. Typical faulty images



B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Drum cartridge	Are there scratches or lines evident on the photo conductor surface?	YES	Replace the drum cartridge.
2		Is the outside dirty?	YES	Clean.
3		Is the connector or contact terminal of the drum cartridge connected properly?	NO	Clean the contact terminal or reconnect the connector.
4	PH unit	Is the connector or contact terminal of the PH unit connected properly?	NO	Clean the contact terminal or reconnect the connector.
5		Is the window surface dirty?	YES	Clean.
6	Transfer belt unit	Is the transfer belt dirty with fingerprints or oil?	YES	Clean.
7		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new transfer belt unit.
8		Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
9	Paper path	Is there a foreign object in the paper path?	YES	Remove the foreign object.
10	Fusing unit	Is the fusing entrance guide plate dirty or scratched?	YES	Clean. Replace the fusing unit.
11		Is the separation claw dirty?	YES	Replace the fusing unit.
12	-	The problem has been eliminated after performing step 11.	NO	Replace the toner cartridge. → Replace the PH unit.

17.2.9 White lines in CD, white bands in CD, colored lines in CD, and colored bands in CD

A. Typical faulty images

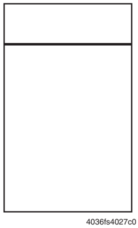
White lines in CD



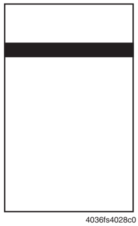
White bands in CD



Colored lines in CD



Colored bands in CD



B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1		Are there scratches or lines evident on the photo conductor surface?	YES	Replace the drum cartridge.
2	Drum cartridge	Is the outside dirty?	YES	Clean.
3		Is the connector or contact terminal of the drum cartridge connected properly?	NO	Clean the contact terminal or reconnect the connector.
4	Toner cartridge	Is the developing bias contact terminal in good contact?	NO	Clean the contact terminal or check the terminal position.
5	PH unit	Is the connector or contact terminal of the PH unit connected properly?	NO	Clean the contact terminal or reconnect the connector.
6	Transfer belt unit	Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new transfer belt unit.
7		Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
8	Paper path	Is there a foreign object in the paper path?	YES	Remove the foreign object.
9	Fusing unit	Is the fusing entrance guide plate dirty or scratched?	YES	Clean.
10		Is the separation claw dirty?	YES	Replace the fusing unit.
11	-	The problem has been eliminated after performing step 10.	NO	Replace the DC power supply1.

17.2.10 Uneven density in FD

A. Typical faulty images



B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Drum cartridge	Are there scratches or lines evident on the photo conductor surface?	YES	Replace the drum cartridge.
2		Is the outside dirty?	YES	Clean.
3	PH unit	Is the window surface dirty?	YES	Clean.
4	Transfer belt unit	Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new transfer belt unit.
5		Is the terminal dirty?	YES	Clean.
6		Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
7	-	The problem has been eliminated after performing step 6.	NO	Replace the toner cartridge. → Replace the PH unit. → Replace the hight voltage unit.

17.2.11 Uneven density in CD

A. Typical faulty images



4036fs4046c0



4036fs4047c0

B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Drum cartridge	Are there scratches or lines evident on the photo conductor surface?	YES	Replace the drum cartridge.
2		Is the outside dirty?	YES	Clean.
3	Transfer belt unit	Is the contact on the rail of the transfer belt unit in good contact with the mating part?	NO	Check or correct contact.
4		Is the transfer belt dirty with fingerprints or oil?	YES	Clean.
5		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new transfer belt unit.
6		Is the terminal dirty?	YES	Clean.
7		Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
8	-	The problem has been eliminated after performing step 7.	NO	Replace the toner cartridge. → Replace the hight voltage unit.

17.2.12 Low image density

A. Typical faulty images



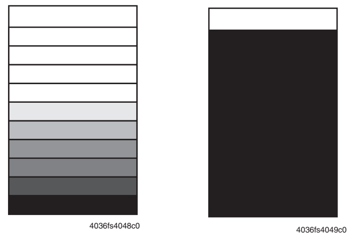
4036fs4036c0

B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Drum cartridge	Is the outside dirty?	YES	Clean.
2	PH unit	Is the window surface dirty?	YES	Clean.
3	Transfer belt unit	Is the contact on the rail of the transfer belt unit in good contact with the mating part?	NO	Check or correct contact.
4		Is the contact dirty?	YES	Clean.
5	2nd transfer roller	Is the terminal dirty?	YES	Clean.
6	Paper	Is the paper damp?	YES	Replace the paper with new paper that has just been unwrapped.
7	IDC sensor	Is the sensor dirty?	YES	Clean.
8	-	The problem has been eliminated after performing step 7.	NO	Replace the toner cartridge. → Replace the transfer belt unit. → Replace the 2nd transfer roller. → Replace the PH unit. → Replace the IDC sensor. → Replace the printer control board → Replace the hight voltage unit.

17.2.13 Gradation reproduction failure

A. Typical faulty images

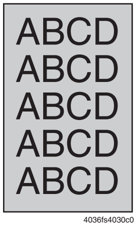


B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Drum cartridge	Is the outside dirty?	YES	Clean.
2	PH unit	Is the window surface dirty?	YES	Clean.
3	IDC sensor	Is the sensor dirty?	YES	Clean.
4	-	The problem has been eliminated after performing step 3.	NO	Replace the toner cartridge. → Replace the PH unit. → Replace the IDC sensor. → Replace the hight voltage unit.

17.2.14 Foggy background

A. Typical faulty images



B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Drum cartridge	Are there scratches or lines evident on the photo conductor surface?	YES	Replace the toner cartridge.
2		Is the outside dirty?	YES	Clean.
3		Is the connector or contact terminal of the drum cartridge connected properly?	NO	Clean the contact terminal or reconnect the connector.
4	Toner cartridge	Is the developing bias contact terminal in good contact?	NO	Clean the contact terminal or check the terminal position.
5	PH unit	Is the connector or contact terminal of the PH unit connected properly?	NO	Clean the contact terminal or reconnect the connector.
6		Is the window surface dirty?	YES	Clean.
7	IDC sensor	Is the sensor dirty?	YES	Clean.
8	-	The problem has been eliminated after performing step 7.	NO	Replace the toner cartridge. → Replace the PH unit. → Replace the IDC sensor.

17.2.15 Poor color reproduction

A. Typical faulty images



4138fs4503c0

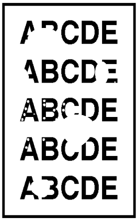
B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Paper	Is the paper damp?	YES	Replace the paper with new paper that has just been unwrapped.
2	Transfer belt unit	Is the terminal dirty?	YES	Clean.
3	IDC sensor	Is the sensor dirty?	YES	Clean.
4	-	The problem has been eliminated after performing step 3.	NO	Replace the transfer belt unit. → Replace the IDC sensor. → Replace the printer control board. → Replace the hight voltage unit.

17.2.16 Void areas, white spots

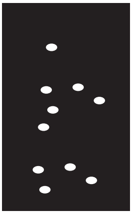
A. Typical faulty images

Void areas



4036fs4050c0

White spots



4036fs4051c0

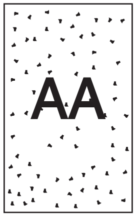
B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Drum cartridge	Are there scratches or lines evident on the photo conductor surface?	YES	Replace the drum cartridge.
2		Is the outside dirty?	YES	Clean.
3	Transfer belt unit	Is the transfer belt dirty with fingerprints or oil?	YES	Clean.
4		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new transfer belt unit.
5		Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
6		Is the ground terminal connected properly?	NO	Correct.
7	Paper path	Is there a foreign object in the paper path?	YES	Remove the foreign object.
8		Is the fusing entrance guide plate dirty or scratched?	YES	Clean or replace.
9	-	The problem has been eliminated after performing step 8.	NO	Replace the toner cartridge.

17.2.17 Colored spots

A. Typical faulty images

Colored spots



4036fs4052c0

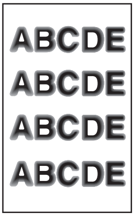
B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Drum cartridge	Are the spots in a single color?	NO	Replace the drum cartridge.
2		Are there scratches or lines evident on the photo conductor surface?	YES	Replace the drum cartridge.
3	Transfer belt unit	Is the transfer belt dirty with fingerprints or oil?	YES	Clean.
4		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new transfer belt unit.
5		Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
6	Paper path	Is there a foreign object in the paper path?	YES	Remove the foreign object.
7	Fusing unit	Is the fusing roller dirty or scratched?	YES	Replace the fusing unit.
8	-	The problem has been eliminated after performing step 7.	NO	Replace the toner cartridge.

17.2.18 Blurred image

A. Typical faulty images

Blurred image



4036fs4031c0

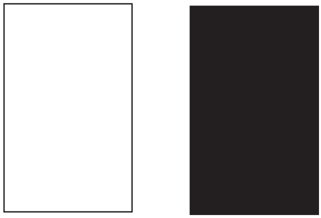
B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	PH unit	Is the window surface dirty?	YES	Clean.
2	Drum cartridge	Is the outside dirty?	YES	Clean.
3	-	The problem has been eliminated after performing step 2.	NO	Replace the drum cartridge. → Replace the PH unit.

17.2.19 Blank copy, black copy

A. Typical faulty images

Blank print Black print



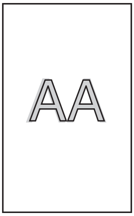
4036fs4038c0 4036fs4039c0

B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Image check	Does a blank print occur?	YES	Check the PH unit connector for proper connection.
2	Drum cartridge	Is the gear of the drum cartridge drive mechanism installed properly?	NO	Check or correct the drive transmitting section or replace the drum cartridge.
3		Is the charge corona voltage contact or photo conductor ground contact of the drum cartridge connected properly?	NO	Check, clean, or correct the contact.
4	High voltage unit	Is the connector connected properly?	NO	Reconnect.
5	-	Have steps 1-4 eliminated the problem?	NO	Replace the high voltage unit. → Replace the printer control board. → Replace the PH unit.

17.2.20 Incorrect color image registration

A. Typical faulty images



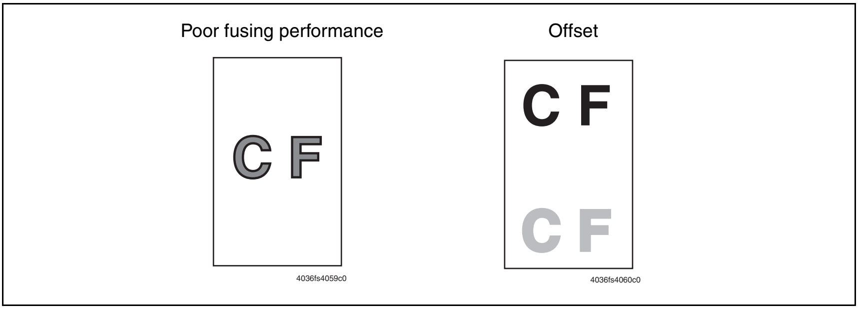
4036fs4032c0

B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Transfer belt unit	Is the transfer belt dirty with fingerprints or oil?	YES	Clean.
2		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new transfer belt unit.
3		Is the drive coupling to the machine dirty?	YES	Clean.
4		Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
5	Drum cartridge	Is the drum cartridge installed in position?	NO	Reinstall the drum cartridge.
6		Is the photo conductor scratched?	YES	Replace the drum cartridge.
7	-	The problem has been eliminated after performing step 6.	NO	Replace the PH unit. → Replace the printer control board.

17.2.21 Poor fusing performance, offset

A. Typical faulty images



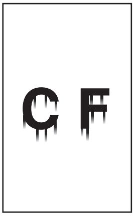
B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Paper	Does the paper being used conform to specifications?	NO	Replace the paper.
2	Fusing unit	Are the fuser separator levers in the correct position?	NO	Correct.
3	-	The problem has been eliminated after performing step 2.	NO	Replace the fusing unit. → Replace the printer control board.

17.2.22 Brush effect, blurred image

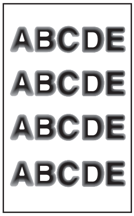
A. Typical faulty images

Brush effect



4036fs4061c0

Blurred image



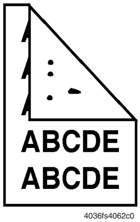
4036fs4031c0

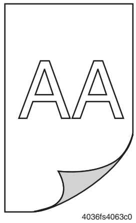
B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Paper	Is the paper damp?	YES	Replace the paper with new paper that has just been unwrapped.
2		Does the paper being used conform to specifications?	NO	Replace the paper.
3	Drum cartridge	Are there scratches or lines evident on the photo conductor surface?	YES	Replace the drum cartridge.
4	Transfer belt unit	Is the transfer belt dirty with fingerprints or oil?	YES	Clean.
5		Is the transfer Belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new transfer belt unit.
6	Fusing unit	Is the fusing entrance guide plate dirty?	YES	Clean.
			NO	Replace the fusing unit.

17.2.23 Back marking

A. Typical faulty images



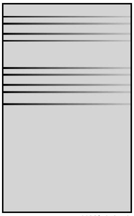


B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Paper path	Is there a foreign object in the paper path?	YES	Remove the foreign object.
2	Fusing unit	Is the fusing entrance guide plate dirty or scratched?	YES	Clean or replace.
3		Is the fusing roller scratched or dirty?	YES	Replace the fusing unit.
4	Transfer belt unit	Is the transfer belt dirty with fingerprints or oil?	YES	Clean.
5		Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
6	-	The problem has been eliminated after performing step 5.	NO	Replace the transfer belt unit. → Replace the fusing unit. → Replace the high voltage unit.

17.2.24 Uneven pitch

A. Typical faulty images



4138fs4507c0

B. Troubleshooting procedure

Step	Section	Check Item	Result	Action
1	Toner cartridge	Is the toner cartridge for each color of toner installed in position?	NO	Reinstall.
2	PH unit	Is the PH unit secured in position with the fixing screw?	NO	Secure it in position.
3	Toner cartridge	Is the drive mechanism of the toner cartridge dirty or damaged?	YES	Clean or replace the toner cartridge.
4	Drum cartridge	Is the photo conductor dirty, scratched, or worn?	YES	Replace the drum cartridge.
5	2nd transfer roller.	Are the 2nd transfer roller and drive mechanism dirty, deformed, or worn?	YES	Replace the 2nd transfer roller.
6	Fusing unit	Are the rollers and drive mechanism of the fusing unit dirty, scratched, deformed, or worn?	YES	Replace the fusing unit.
7	-	The problem has been eliminated after performing step 6.	NO	Replace the transfer belt unit.

18. FAX error

18.1 Communication error



4139F4E512DA

18.2 Outline

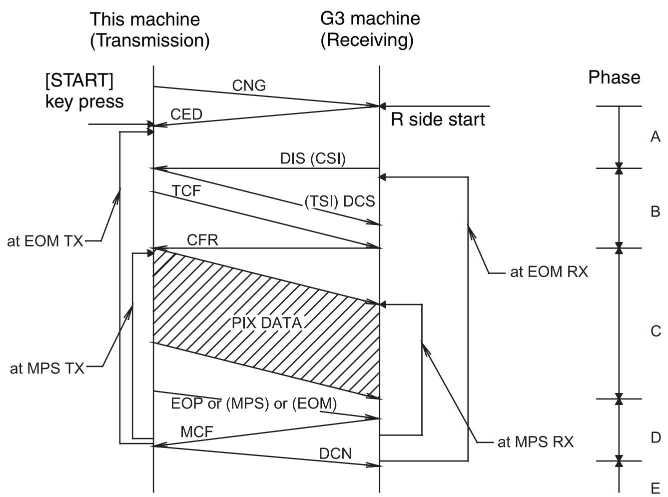
- Error caused by a problem of communication functioning. Five possible causes of errors are:

1. Communication is discontinued by a machine error.
2. Communication is discontinued by a machine trouble.
3. Communication is discontinued by an error occurring at the destination station.
4. Communication is discontinued by a protocol error.
5. ADF Error on trouble.

- When communication is discontinued due to item 3 or 4, transmission is retried. In other case, transmission is canceled without retry.

18.3 Error occurring during transmission

- The transmission error before “Phase-B” performs redial according to the redial interval of each country and the number of times.
  The transmission error after “Phase-C” performs redial only one time. Transmission is canceled when an error occurs again. (can change in Soft SW)
  When an error occurs by ADF TX, transmission is canceled without redial.



4139F4E513DA

18.3.1 Error occurring during reception

- Reception is canceled.

18.4 Error code

18.4.1 Reception

Code	Possible Causes of Error.
0001	No G3 signal received within 35 sec. in manual receive mode.
0003	Received DIS after sending DIS signal.
0004	Received DCN after sending DTC signal.
0006	Detect busy tone within receiving phase B.
0009	Can not receive any signal within 35 sec. in manual polling mode.
0010	Received DCN signal after sending DTC signal in polling RX.
0011	Can not receive any correct response after sending three DTC signals.
0012	Remote side Password does not match in polling RX/our side no file to be polled.
0013	Can not receive carrier signal within 6 sec. after sending CFR in data phase C.
0014	Can not receive T.30 signal after sending FTT signal.
0015	Line polarity change within receiving phase B to D.
0016	Receive DCN signal after sending PTT signal.
0017	Can not receive any response from remote side after sending type of xxx_EOM signal.
0018	Can not detect energy within 6 sec. after sending FTT command.
0019	Received DCN signal after sending CFR signal.
001A	No energy on line over 6 sec. within phase C before any corrected ECM frame.
001D	Detect flag but nothing after CFR.
0020	Can not correct frame within 6 sec., or in non-ECM mode, one decoding line over 6 sec.
0021	File full.
0022	Owing to noise interference on the line, receiving side can't receive correct data within specified time (no ECM).
002A	Line Problem
0030	Did not receive any signal within 6 sec.at phase D.
0031	Received incorrect signal at phase D (not EOP, MPS, EOM, DCS PPS_Q, PPS_Q, etc.).
0032	Can not receive carrier within 6 sec. After sending MCF. Or RTP, RTN signal.
0033	Received DCN signal at phase D within pages (not last page).
0039	In non-ECM mode, when machine already received the data but next line data doesn't receive within 13TX and RX machines both have different “machine ID (FAX model ID)” code in RSD.
003F	Remote side TSI not programmed in machine one touch or speed dial directory.
0040	Did not receive carrier signal within 6 sec. after sending CTR.
0041	Did not receive carrier signal within 6 sec. after sending PPR.
0042	Did not receive correct signal after sending RNR signal.
0043	Received incorrect signal at phase D in ECM mode.
0044	Did not receive carrier signal /FSK signal within 6 sec. after sending MCF in ECM mode.
0045	Did not receive any correct signal after sending RNR response with ERR signal.
0046	Receive incorrect signal when sending RNR response with ERR signal.
0047	Did not receive correct signal after sending ERR signal.
0048	Did not receive correct signal after receiving PPS_PRI_Q or PRI_Q, EOR_PRI_Q.
0049	Did not receive correct signal after sending PIP/PIN signal within 13 sec.

Code	Possible Causes of Error.
004A	Line energy over threshold lasts for 60 seconds after MCF and can not detect FSK or carrier signal in ECM mode.
004B	Can not detect correct FSK signal even though detected FSK tone within 6 sec.
004C	Handshake fail during re-train or between page in V34 RX.
004E	Receive DCN signal after sending DIS in V.34.
004F	Remote side disconnected after sending ANSam in V.8 phase.
0050	Did not receive any correct signal after sending CJ signal in V.8 phase.
0051	Did not receive phase 3 signal after phase 2 within 20 seconds in V.34.
0052	Did not receive phase 4 signal after phase 3 within 20 seconds in V.34.
0053	Modem disconnect after phase 4 in V.34.
0054	Remote side disconnected after phase 4 in V.8.
0055	Receive incorrect signal after sending DIS signal in V.34.
0056	Modem disconnect after sending CFR in V.34.
0057	Did not detect image signal within 6 seconds after sending CFR.
0058	Did not detect image signal within 6 seconds after modem enter to primary phase in V.34.
005A	Modem can not detect any correct ECM frame within 3 minutes in phase C.
005B	Did not detect phase 5 signal after primary channel within 6 seconds.
005C	Detect busy tone within control channel after phase C.
005D	Modem can not detect any correct ECM frame with 12 Sec in phase C.
005E	Did not detect control channel signal after received RCP frame within 6 seconds.
005F	Did not detect silence after sending JM signal for polling TX function.
0060	There are no bulletin files to be polled in V.34.
0061	Machine can not detect V.21 or V.8 signal within 35 seconds.
0062	Modem disconnect in phase D after our side sending out flag sequence in control channel.
0063	Did not receive any flag sequence in control channel within 6 seconds in phase D.
0064	Did not detect any control channel signal in phase D within 60 seconds even though energy still on the line.
0065	Did not detect any control channel signal within 60 seconds after detect silence in phase D.
0066	Did not receive T.30 signal or carrier signal after sending CFR in V.34.
0070	User presses stop key during receiving.
0071	Memory full during receiving.

18.4.2 Transmission

Code	Possible Causes of Error.
0080	Did not detect any G3 signal within 35 sec. specified by ITU-T in phase B.
0081	Received DTC signal in transmission phase.
0082	Transmitting unit receives a signal other than DIS or DTC. and DCN in phase B.
0083	Detected FSK signal, but did not receive any signal within 35 seconds.
0084	Detect DCN signal in phase B.
0085	Transmitting unit sending DCS 3 times consecutively, but each time responds with DIS/DTC.
0086	Detected response signal other than DTC, DIS, FTT, DCN or CFR after sending DCS.
0087	Training attempt has failed because speed unit cannot adjust to low lower speed.
0088	Received DCN signal after sending out DCS signal.
008B	Receiver's protocol of DIS is received, but it is not compatible with our machine.
008D	Receiver's protocol of DIS is received, but remote side can't receive document temporary, may be cause by run out of paper or other reason.
008E	Remote side CSI number not defined in machine one touch or speed dial directory.
008F	Modem not ready to receive V.34 data during 6 seconds after receiving CFR signal.
0090	Called side document not ready for our polling.
0091	Sending out DCS+TCF signal 3 times consecutively but no signal in response from receiver.
0092	Remote side disconnected during transmitting phase.
0093	Received DCN signal after sending out DCS signal for V.34.
0094	Time out during transmit ECM frame or RCP command.
0095	Wrong ID number when Polling RX.
0099	Remote side disconnect after primary channel.
009A	Did not detect any signal after sending CI signal.
009C	Received DCN after sending DTC in V.34 polling RX.
009D	Remote side hang up before V.34 modem enters phase 2 state in V.34 polling RX.
009F	Did not receive any response from other side after sending PPS_EOM signal.
00A0	User stops or cancels transmission job.
00A1	Document JAM during transmission.
00AE	Did not finish V.8 procedure or detect V.21 signal after CM signal within 30 seconds.
00AF	Modem can not enter into control channel after TX side sends out RCP signal for V.34.
00B0	Did not receive any command after our side retry three DCS signal in V.34 TX.
00B1	Did not finish V.8 procedure or detect V.21 signal after ANSam signal within 35 seconds.
00B2	Did not detect phase 2 signal after our side sending CJ signal within 30 seconds.
00B3	Did not detect correct V.21 or JM signal after sending CM signal.
00B4	Did not detect correct phase 2 signal within 25 second after CM/JM signal exchange.
00B5	Did not detect phase 3 signal after phase 2 within 25 seconds.
00B6	Did not detect phase 4 signal within 25 seconds after CM/JM exchange.
00B7	Did not detect phase 5 signal after phase 4 within 30 seconds.
00B8	Remote side disconnect after our side sent DCS signal in V.34.
00B9	Receive T.30 signal other than DIS,DCS,CFR after sending DCS signal in V.34.
00BA	Did not receive correct signal after our side sent DTC signal in V.34.
00BB	Every time our side received DIS signal after sending DTC in V.34.

Code	Possible Causes of Error.
00BC	Modem not ready within 10 second after entering primary channel in V.34.
00BD	Can not detect correct V.21 or JM signal after detected FSK frequency.
00BE	Remote side no document to be polled after V8 handshaking.
00BF	Capability not match after V8 handshaking.
00C0	Remote side disconnect before entering primary channel in V.34.
00C1	At phase-D, transmitting unit sends out EOP 3 times consecutively, but receives no answer from receiving unit.
00C2	Remote side disconnect after sending out V.8 CM signal.
00C4	After sending MPS signal, the received signal is not one of MCF, RTN, PIP, PIN, RTP, DCN.
00C5	Received DCN signal after sending MPS signal.
00C9	At phase-D, sending MPS 3 times consecutively, but no answer from receiving unit.
00CA	After sending EOP signal, the received signal is not one of MCF, RTN, PIP, PIN, PRI-EOP, DCN.
00CB	After sending EOP signal, the received signal is DCN signal.
00CC	After sending EOM signal, the received signal is not one of MCF, RTN, PIP, PIN, RTP, DCN.
00CD	At phase-D, transmitting unit sends out EOM 3 times consecutively, but receives no answer.
00CE	At phase-D, transmitting unit sends out EOM, but receives DCN.
00CF	Received incorrect signal after sending DTC signal for V.34 polling.
00D0	Received ERR signal after sending EOR_NULL.
00D1	Received incorrect response after sending PPS_EOP signal in V.34.
00D2	Receive DCN after send command PPS_EOP signal.
00D3	Received DCN after sending PPS_NULL signal.
00D4	Received DCN after sending PPS_EOM signal.
00D8	Did not detect correct phase 3 signal for polling within 25 seconds.
00D9	Did not detect correct phase 3 signal after detecting silence after phase 2.
00DA	Did not detect phase 4 signal within 30 seconds or remote side hang up over 6 seconds.
00DB	Did not receive any T.30 signal within 15 seconds in phase 4.
00DC	Received T.30 signal in phase 4 other than DCS, DIS or DTC.
00DE	Remote side no SUB capability in V.34.
00E0	At phase-D, transmitting unit sends out PPS_NULL 3 times consecutively but receives no answer.
00E1	Received incorrect response after sending PPS_NULL.
00E2	Did not receive any response in RR response procedure after sending PPS_NULL.
00E4	At phase-D, transmitting unit sends out PPS_MPS 3 times consecutively but no answer.
00E5	Received incorrect response after sending PPS_MPS.
00E6	Did not receive any response in RR response procedure after sending PPS_MPS.
00E7	Received DCN after sending PPS_MPS.
00E8	At phase-D, transmitting unit sends out PPS_EOP 3 times consecutively but no answer.
00E9	Receive PIN signal after sent last page three times.
00EA	Did not receive any response in RR response procedure after sending PPS_EOP.
00EB	At phase-D, transmitting unit sends out PPS_EOM 3 times consecutively but no answer.
00EC	Received incorrect response after sending PPS_EOM.
00ED	Did not receive any response in RR response procedure after sent out PPS_EOM.

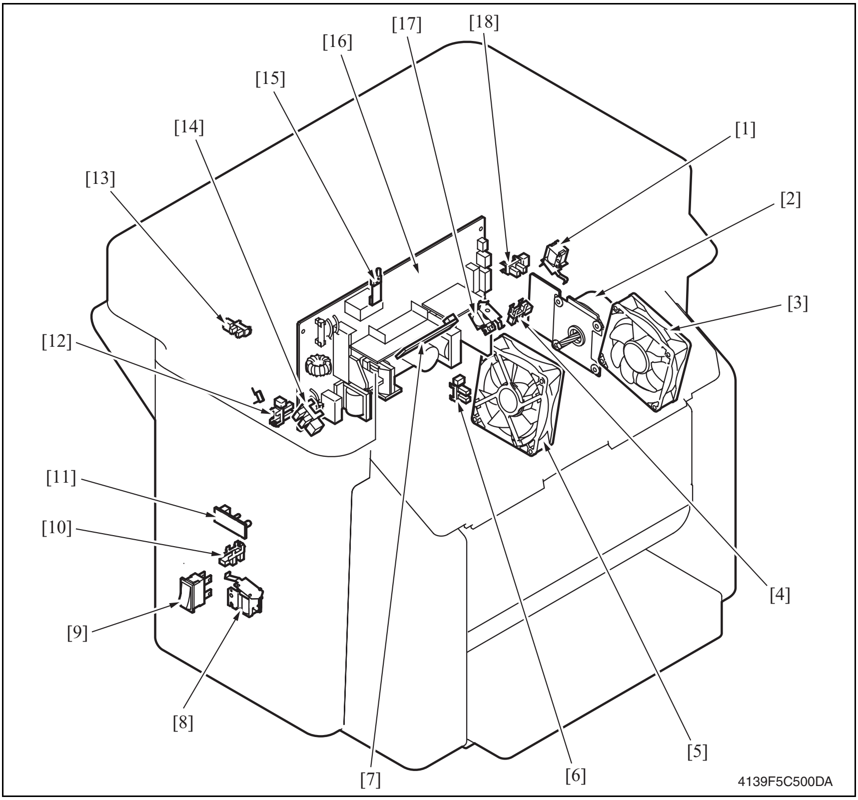
Code	Possible Causes of Error.
00EE	At phase-D, transmitting unit sends out EOR_NULL 3 times consecutively but no answer.
00EF	Received incorrect response after sending EOR_NULL.
00F0	Did not receive any response procedure after sending EOR_NULL.
00F1	At phase-D, transmitting unit sends out EOR_MPS 3 times consecutively but no answer.
00F2	Received incorrect response after sending EOR_MPS.
00F3	Received ERR signal after sending EOR_MPS.
00F4	Did not receive any response in RR response procedure after sending EOR_MPS.
00F5	At phase-D, transmitting unit sends out EOR_EOP 3 times consecutively but no answer.
00F6	Received incorrect response after sending EOR_EOP.
00F7	After Received ERR, our side can not receive response after sending EOR_EOP command.
00F8	At phase-D, transmitting unit sends out EOR_EOM 3 times consecutively but no answer.
00F9	Received incorrect response after sending EOR_EOM.
00FA	Received ERR signal after sending EOR_EOM.
00FB	Did not receive any response in RR response procedure after sending EOR_EOM.
00FC	Did not receive any response after sending CTC.
00FD	Can’t speed down to lower speed in ECM mode.
00FE	Memory full for transmission.
00FF	Redial all fail.

Blank Page

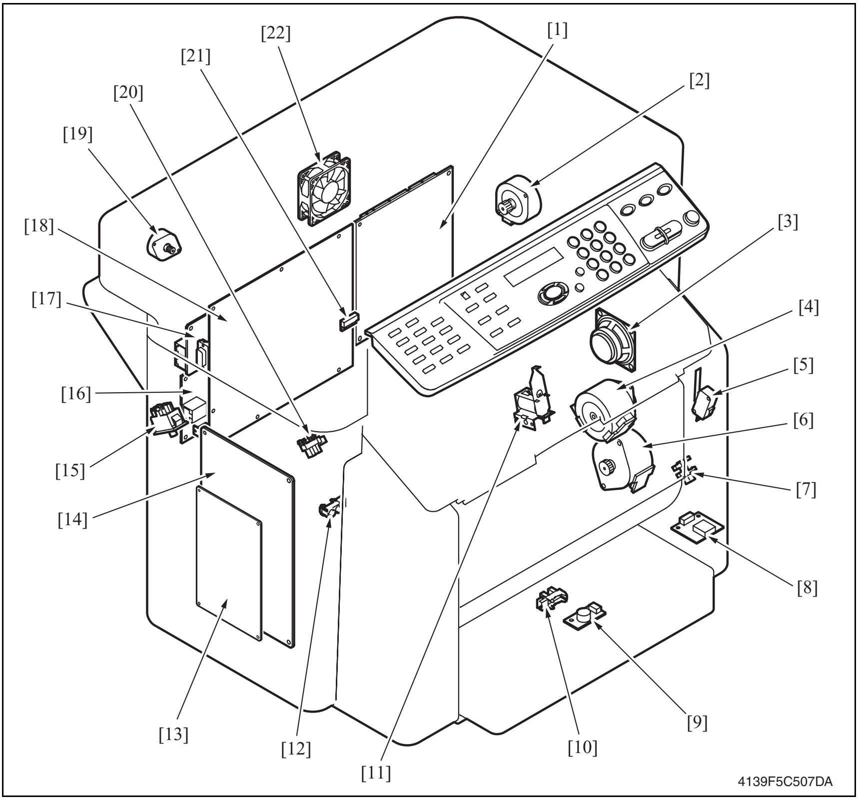
Appendix

19. Parts layout drawing

19.1 Main body

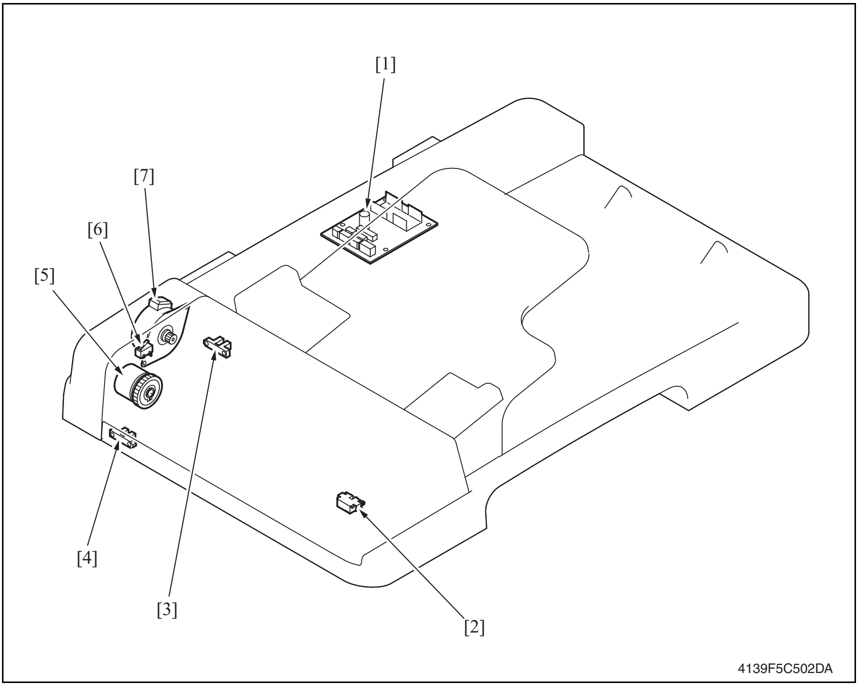


[1]	Pressure/retraction solenoid /cleaning blade (SD3)	[10]	Fusing paper loop sensor (PS8)
[2]	Main motor (M1)	[11]	Waste toner near full detect board/LED (WTDTB/LED)
[3]	Ventilation fan motor (FM2)	[12]	Belt positioning sensor (PS4)
[4]	Retraction position sensor /cleaning blade (PS6)	[13]	Exit sensor (PS7)
[5]	Power supply cooling fan motor (FM1)	[14]	IR unit open/close sensor (PS10)
[6]	Retraction position sensor /2nd image transfer (PS5)	[15]	Thermistor (TH)
[7]	IDC sensor (IDC)	[16]	DC power supply1 (DCPU1)
[8]	Tray1 paper pick-up solenoid (SD1)	[17]	Pressure/retraction solenoid /2nd image transfer (SD4)
[9]	Power switch (SW1)	[18]	Exit tray full sensor (PS11)



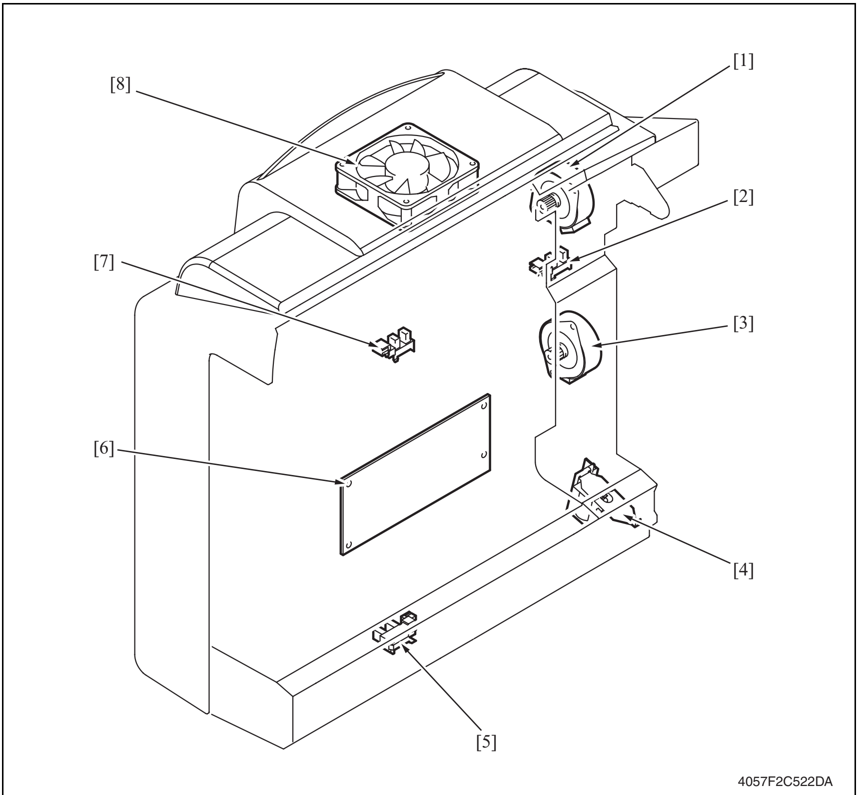
[1] Printer control board (PRCB)
[2] Fusing motor (M4)
[3] Speaker (SP)
[4] Developing motor (M3)
[5] Safety switch (SW2)
[6] Rack motor (M2)
[7] Rack positioning sensor (PS3)
[8] USB board (USB)
[9] Temperature/humidity sensor (TEM/HUMS)
[10] Tray1 paper empty sensor (PS9)
[11] Registration roller solenoid (SD2)
[12] OHP sensor (PS2)
[13] DC power supply2 (DCPU2)
[14] High voltage unit (HV)
[15] Fusing safety switch (SW3)
[16] LAN board (LANB)
[17] NCU board (NCUB)
[18] Image processing board (IPB)
[19] Scanner motor (M5)
[20] Registration sensor (PS1)
[21] Original Cover Set Switch (SW4)
[22] IR cooling fan motor (FM3)

19.2 Auto Document Feeder Unit



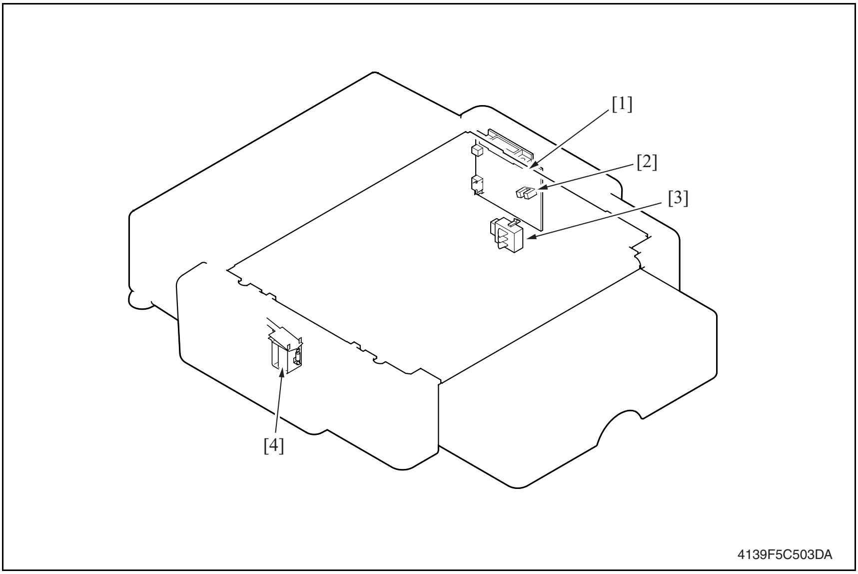
[1]	DF control board (DFCB)	[5]	Paper feed clutch (CL1)
[2]	Paper feed sensor (PS2)	[6]	Door set switch (SW1)
[3]	Original detection sensor (PS1)	[7]	Main motor (M1)
[4]	Paper leading edge detection sensor (PS3)		

19.3 Duplex Option (Option)



[1]	Reverse motor (M2)	[5]	Paper loop sensor (PS1)
[2]	Door sensor (PS2)	[6]	AD drive board (ADDB)
[3]	Transport motor (M1)	[7]	Transport sensor (PS3)
[4]	Registration solenoid (SD1)	[8]	Cooling fan motor (FM1)

19.4 Lower Feeder Unit (Option)



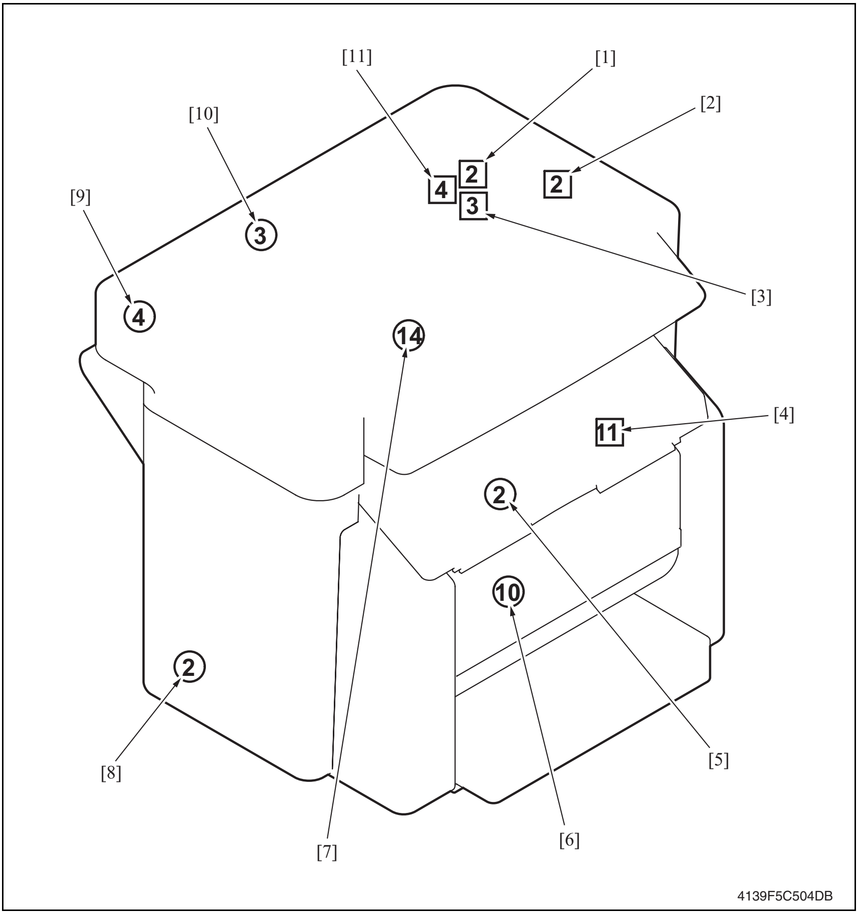
[1]	PF drive board (PFDB)	[3]	Tray set detecting switch (SW1)
[2]	Paper empty sensor (PS1)	[4]	Paper pick-up solenoid (SD1)

20. Connector layout drawing

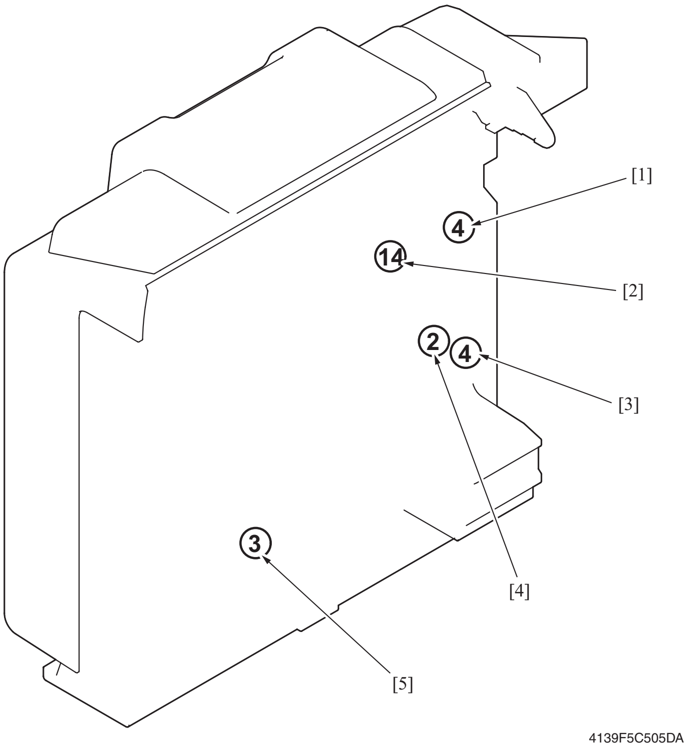
Description

Number of Pin → ① Possible to confirm by removing external cover.

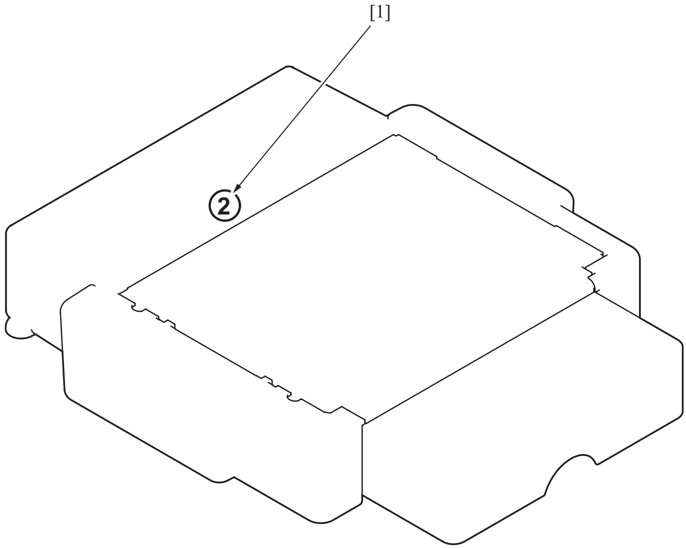
→ [1] Not possible to confirm by removing external cover.



No.	CN No.	Location	No.	CN No.	Location
[1]	CN5	I-1	[7]	CN7	E-7 to 8
[2]	CN3	D-3	[8]	CN11	K to L-8
[3]	CN2	D-4	[9]	CN10	K-11
[4]	CN1	D-5	[10]	CN9	K-10
[5]	CN6	I-1	[11]	CN4	D-3
[6]	CN8	C-8 to 9			



No.	CN No.	Location	No.	CN No.	Location
[1]	CN13	C-5	[4]	CN11	F-4
[2]	CN7	B-5 to 6	[5]	CN14	F-4 to 5
[3]	CN12	C-4			



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No.	CN No.	Location
[1]	CN1	F-4

SERVICE MANUAL

FIELD SERVICE

Auto Document Feeder Unit

2007.08

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

Revision history

After publication of this service manual, the parts and mechanism may be subject to change for improvement of their performance.
Therefore, the descriptions given in this service manual may not coincide with the actual machine.

When any change has been made to the descriptions in the service manual, a revised version will be issued with a revision mark added as required.

Revision mark:

- To indicate clearly a section revised, show △1 to the left of the revised section.
  A number within △1 represents the number of times the revision has been made.

- To indicate clearly a section revised, show ▲1 in the lower outside section of the corresponding page.
  A number within ▲1 represents the number of times the revision has been made.

NOTE
Revision marks shown in a page are restricted only to the latest ones with the old ones deleted.

- When a page revised in Ver. 2.0 has been changed in Ver. 3.0:
  The revision marks for Ver. 3.0 only are shown with those for Ver. 2.0 deleted.
- When a page revised in Ver. 2.0 has not been changed in Ver. 3.0:
  The revision marks for Ver. 2.0 are left as they are.

2007/08	1.0	—	Issue of the first edition
Date	Service manual Ver.	Revision mark	Descriptions of revision

CONTENTS

Auto Document Feeder Unit

General

Maintenance

Adjustment/Setting

Auto Document Feeder Unit
General
Maintenance
Adjustment / Setting
Troubleshooting

Troubleshooting

General

1. Product Specifications

A. Type

Name	Automatic Document Feeder
Installation	Inserted at upper-rear side of main body
Document alignment	Center
Document loading	Face up

B. Functions

Modes	1-Sided Mode

C. Paper

Type of document	1-Sided mode (Plain paper): 60 g/m^2 to 128 g/m^2	
Detectable document size	A5S, B5S, A4S, LegalS, LetterS	
	Width	140 to 216 mm
	Length	148 to 500 mm (500mm: Fax Tx only)
Capacity	50 sheets (80 g/m^2) or load height of 8 mm or less.	

D. Paper feed prohibited originals

- The following types of originals should not be used.

Types of document	Possible malfunctions
Original that is stapled or clipped.	Feed failure, damage to the original, or drive failure due to clip clogging
Pasted originals	Misfeed, broken original, or folded paste-up edges
Book original	Feed failure, damage to the original, or drive failure
Original weighing less than 60 g/m^2 or 129 g/m^2 or more	Feed failure
Torn original	Feed failure, damaged sheet
Highly curled original (15 mm or more)	Original misfeed due to dog-ear or skew
OHP transparencies	Feed failure
Label Sheet	Feed failure
Photographic paper, gloss enamel paper, or other gloss original	Feed failure, damage to the original, or drive failure
Offset master	Feed failure
Sheets clipped or notched	Damaged sheet
Less-than-0.05-mm-thick thin paper	Misfeed
More-than-0.15-mm-thick thin paper	Misfeed

E. Paper feed not guaranteed originals

- If fed, paper feed will be possible to some extent but trouble occurrence will be possible.

Type of original	Possible trouble
Sheets lightly curled (Curled amount: 10 - 15 mm)	Dog-eared, exit failure
Heat sensitive paper	Edge folded, exit failure, transport failure
Translucent paper	Take-up failure, transport failure
Paper immediately after paper exit from the main unit	Take-up failure, transport failure
Paper with many punched holes (e.g., loose leaf) limited to vertical feeding	Multi-page feed due to flashes from holes
Sheets with 2 to 4 holes	Transport failure
Sheets two-folded or Z-folded	Transport failure, image deformation
Sheets folded	Image deformation, multi-page feed, take-up failure

F. Machine specifications

Power requirements	DC 24 V (supplied from the main unit)
	DC 5 V (supplied from the main unit)
Max. power consumption	30 W
Dimensions	518 (W) x 350.1 (D) x 90.3 (H) mm 20.5 (W) x 13.75 (D) x 3.5 (H) inch
Weight	3.2 kg (7 lb)

G. Operating

- Conforms to the operating environment of the main body.

NOTE

- **These specifications are subject to change without notice.**

Maintenance

2. Periodic check

2.1 Maintenance procedure (Periodic parts check)

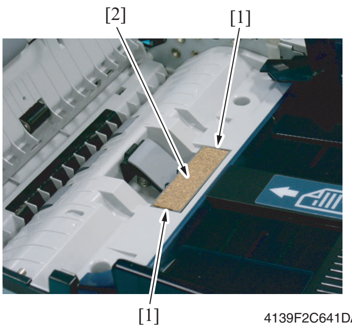
2.1.1 Separator pad

A. Periodically replaced parts/cycle

- Separation pad: Every 50,000 prints

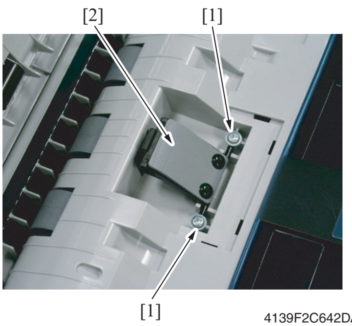
B. Removal procedure

1. Open the top cover.



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2. Remove two tabs [1] and separator cover [2].



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3. Remove two screws [1] and the separator pad [2].

NOTE

- **Be extremely careful not to lose the spring on the separator pad.**

3. Other

3.1 Disassembly/Adjustment prohibited items

A. Paint-locked screws

NOTE

- **To prevent loose screws, a screw lock in blue or green series color is applied to the screws.**
- **The screw lock is applied to the screws that may get loose due to the vibrations and loads created by the use of machine or due to the vibrations created during transportation.**
- **If the screw lock coated screws are loosened or removed, be sure to apply a screw lock after the screws are tightened.**

B. Red-painted screws

NOTE

- **The screws which are difficult to be adjusted in the field are painted in red in order to prevent them from being removed by mistake.**
- **Do not remove or loosen any of the red-painted screws in the field. It should also be noted that, when two or more screws are used for a single part, only one representative screw may be marked with the red paint.**

C. Variable resistors on board

NOTE

- **Do not turn the variable resistors on boards for which no adjusting instructions are given in Adjustment/Setting.**

D. Removal of PWBs

⚠ CAUTION

- **When removing a circuit board or other electrical component, refer to "Handling of PWBs" and follow the corresponding removal procedures.**
- **The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.**
- **Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.**

3.2 Disassembly/Assembly/Cleaning list (other parts)

3.2.1 Disassembly/Assembly parts list

No	Section	Part name	Ref.Page
1	Rollers	Paper feed roller	P.6
2		Pick-up roller	P.7
3	Unit	Auto Document Feeder Unit	P.8
4	Exterior parts	Top cover	P.9
5		Rear cover	P.9
6		Document feeder tray	P.10
7	Board and etc	DF control board	P.10
8	Other part	Main motor	P.11

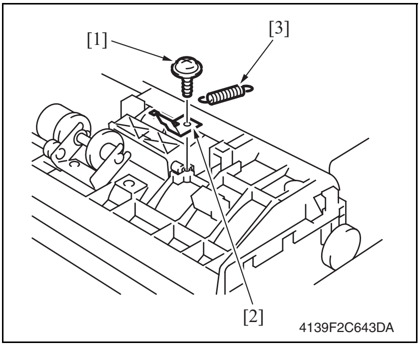
3.2.2 Cleaning parts list

No	Section	Part name	Ref.Page
1	Rollers	Paper feed roller	P.12
2		Pick-up roller	P.12
3		Registration rollers	P.13

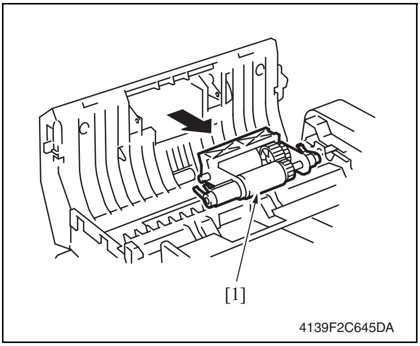
3.3 Disassembly/Assembly procedure

3.3.1 Paper feed roller

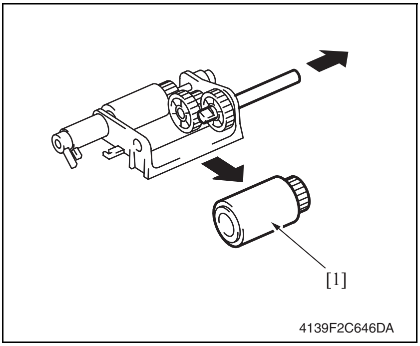
1. Open the top cover.
2. Remove the top cover.
   See P.9



3. Remove the screw [1], and then remove the mounting plate [2] and spring [3].



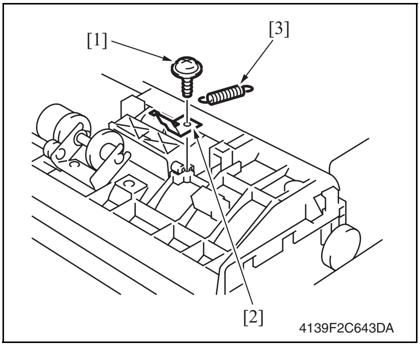
4. Remove the pick-up roller/paper feed roller assy [1].



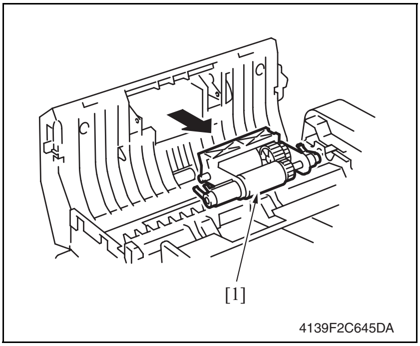
5. Remove the paper feed roller [1].

3.3.2 Pick-up roller

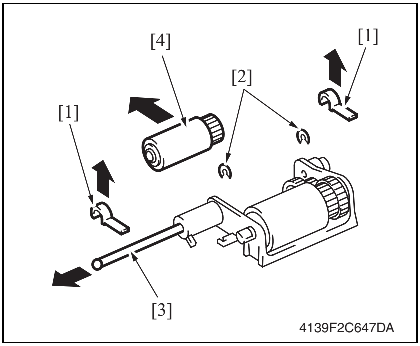
1. Open the top cover.
2. Remove the top cover.
   See P.9



3. Remove the screw [1], and then remove the mounting plate [2] and spring [3].

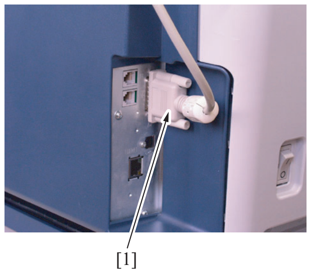


4. Remove the pick-up roller/paper feed roller assy [1].



5. Remove two stoppers [1] and two C-rings [2]. Then, remove shaft [3].
6. Remove the pick-up roller [4].

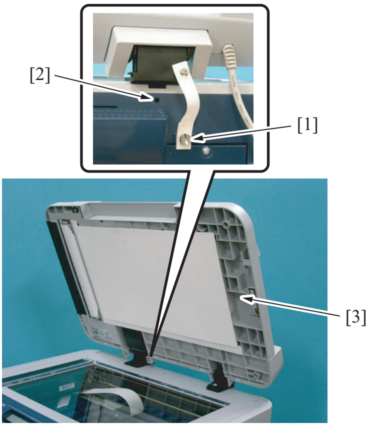
3.3.3 Auto Document Feeder Unit



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1. Disconnect the ADF hookup cable [1].

NOTE
- **NEVER disconnect and reconnect the ADF hookup cable with the power switch of the machine turned ON, as a damaged image processing board could result.**

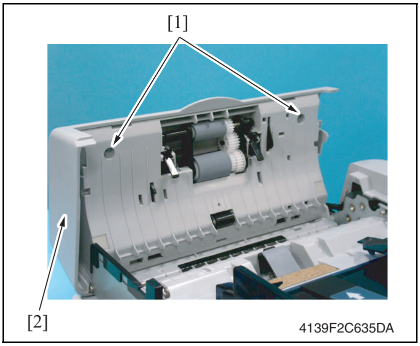


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2. Open the Auto Document Feeder Unit.
3. Remove the screw [1].
4. While inserting a pin or similar object into the hole [2], remove the Auto Document Feeder Unit [3].

NOTE
Make the following adjustments when a new Auto Document Feeder Unit has been mounted:
- **Make a leading edge skew adjustment.**
  See P.20
- **Perform ADF SUB ZOOM.**
  See P.17
- **Perform CD REGIST.**
  See P.18
- **Perform FD REGIST.**
  See P.19

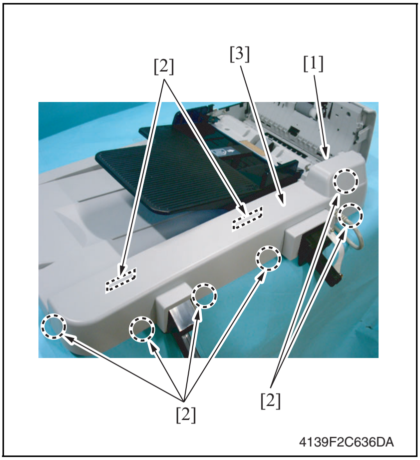
3.3.4 Top cover



1. Open the top cover.
2. Remove two screws [1] and the top cover [2].

3.3.5 Rear cover

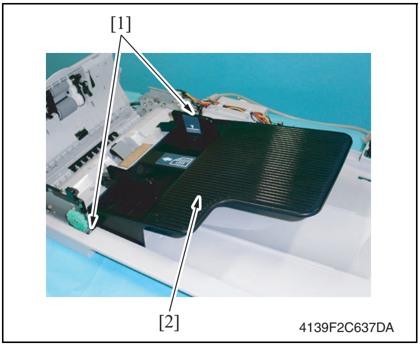
1. Remove the Auto Document Feeder Unit.
See P.8



2. Open the top cover.
3. Remove the screw [1] and unhook the eight tabs [2]. Then, remove the rear cover [3].

3.3.6 Document feeder tray

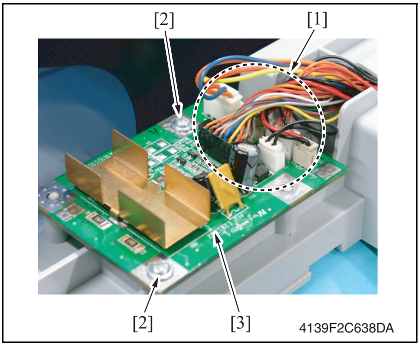
1. Remove the Auto Document Feeder Unit.
   See P.8
2. Open the top cover.
3. Remove the rear cover.
   See P.9



4. Remove two screws [1] and the document feeder tray [2].

3.3.7 DF control board

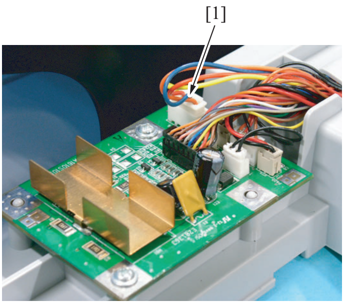
1. Remove the Auto Document Feeder Unit.
   See P.8
2. Open the top cover.
3. Remove the rear cover.
   See P.9



4. Disconnect the seven connectors [1] and remove the two screws [2]. Then, remove the DF control board [3].

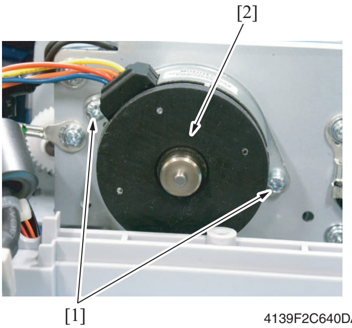
3.3.8 Main motor

1. Remove the Auto Document Feeder Unit.
   See P.8
2. Open the top cover.
3. Remove the rear cover.
   See P.9



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4. Disconnect the connector (PA01) [1] from the DF control board.



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5. Remove two screws [1] and the main motor [2].

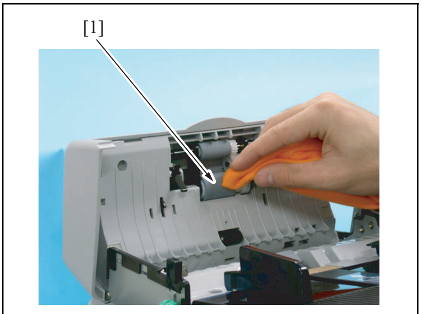
3.4 Cleaning procedure

NOTE

- **The alcohol described in the cleaning procedure is isopropyl alcohol.**

3.4.1 Paper feed roller

1. Open the top cover.

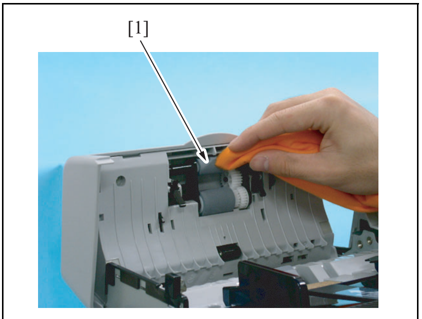


4139F2C648DA

2. Wipe the paper feed roller [1] clean of dirt using a soft cloth dampened with alcohol.

3.4.2 Pick-up roller

1. Open the top cover.

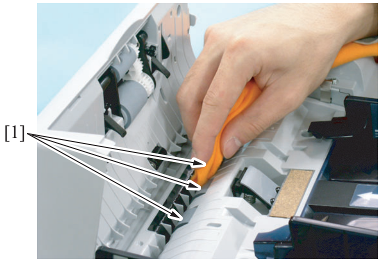


4139F2C649DA

2. Wipe the pick-up roller [1] clean of dirt using a soft cloth dampened with alcohol.

3.4.3 Registration rollers

1. Open the top cover.



4139F2C650DA

2. Wipe the registration rollers [1] clean of dirt using a soft cloth dampened with alcohol.

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Adjustment/Setting

4. How to use the adjustment section

- “Adjustment/Setting” contains detailed information on the adjustment items and procedures for this machine.
- Throughout this “Adjustment/Setting,” the default settings are indicated by “ ”.

Advance checks
Before attempting to solve the customer problem, the following advance checks must be made. Check to see if:

- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
- The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
- The original has a problem that may cause a defective image.
- The density is properly selected.
- The original glass, slit glass, or related part is dirty.
- Correct paper is being used for printing.
- The units, parts, and supplies used for printing (developer, PC drum, etc.) are properly replenished and replaced when they reach the end of their useful service life.
- Toner is not running out.

⚠ **CAUTION**
- **Be sure to unplug the power cord of the machine before starting the service job procedures.**
- **If it is unavoidably necessary to service the machine with its power turned ON, use utmost care not to be caught in the scanner cables or gears of the exposure unit.**
- **Special care should be used when handling the fusing unit which can be extremely hot.**
- **The developing unit has a strong magnetic field. Keep watches and measuring instruments away from it.**
- **Take care not to damage the PC drum with a tool or similar device.**
- **Do not touch IC pins with bare hands.**

5. SERVICE MODE

5.1 SERVICE MODE entry procedure

NOTE

- **Ensure appropriate security for the Service Mode entry procedure. It should NEVER be given to any unauthorized person.**

A. Procedure

1. On the initial screen, press the Menu/Select key to call [MACHINE SETTING] to the screen.

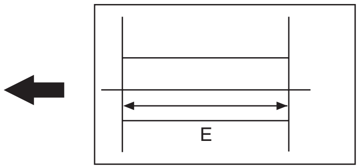
2. Press the following keys in this order.
Stop → 0 → 0 → Stop → 0 → 1

B. Exiting

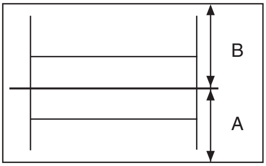
- Press the Stop/Reset key.

5.2 ADJUST

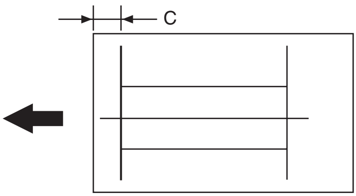
5.2.1 ADF SUB ZOOM

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** • **After the [PRN MAIN REGIST] and [PRN SUB REGIST] and [CCD SUB ZOOM] adjustments have been performed**
Adjustment Specification	• Adjust the length of E in the copy of the test pattern so that the following specification is met. • 200 ± 0.5 % (Zoom Ratio = Full Size: 100 %)  4139F3C549DA
Adjustment Range	• -2.0% ~ “0%” ~ +2.0% • Step: 0.4%
Setting/ Procedure	*1.* Print the test pattern1. See P.131 of the main unit service manual. *2.* Enter the [2. ADJUST] menu in the service mode. *3.* Select [ADF SUB ZOOM] of [2. ADJUST] and press the Menu Select key. *4.* Place the test pattern1 into the Automatic Document Feeder and make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** *5.* Check that the width of E in the copy of the test pattern1 meets the specification. Calculation: (1 - Width of E in the document ÷ Width of E in the copy) × 100 If the width of E is out of specification, adjust it according to the following procedure. *6.* Press the Menu Select key. *7.* Using the ▲/▼ key, change the setting value and then press the Menu Select key. *8.* Place the test pattern1 into the Automatic Document Feeder. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of E in the test pattern is longer than the specified width ..... Decrease the setting. • If the width of E in the test pattern is shorter than the specified width ..... Increase the setting.

5.2.2 ADF MAIN REGIST

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the main scanning direction when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** • **After the [PRN MAIN REGIST] and [PRN SUB REGIST] and [CCD SUB ZOOM] adjustments have been performed** • **After the [ADF SUB ZOOM] adjustments have been performed**
Adjustment Specification	• Adjust the amount that widths A and B in the copy of the test pattern1 so that the following specification is met. • 0 ± 2.0 mm  4139F3C546DA
Adjustment Range	• -5.0 (-5.0 mm) ~ “0.0 (0.0 mm)” ~ +5.0 (+5.0 mm) • Step: 0.5 mm
Setting/ Procedure	*1.* Print the test pattern1. See P.131 of the main unit service manual. *2.* Enter the [2. ADJUST] menu in the service mode. *3.* Select [ADF MAIN REGIST] of [2. ADJUST] and press the Menu Select key. *4.* Place the test pattern1 into the Automatic Document Feeder and make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** *5.* Check the amount that widths A and B in the copy of the test pattern are shifted. If the shift is out of specification, adjust it according to the following procedure. *6.* Press the Menu Select key. *7.* Using the ▲/▼ key, change the setting value and then press the Menu Select key. *8.* Place the test pattern1 into the Automatic Document Feeder. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of A is less than the width of B..... Increase the setting. • If the width of B is less than the width of A..... Decrease the setting.

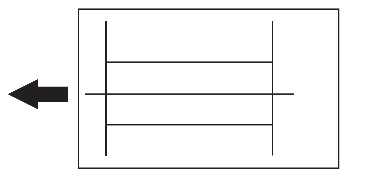
5.2.3 ADF SUB REGIST

Function	• To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the sub-scanning direction when using the Automatic Document Feeder.
Use	• When the original glass is replaced. • When a new Auto Document Feeder Unit is mounted **NOTE** • **After the [PRN MAIN REGIST] and [PRN SUB REGIST] and [CCD SUB ZOOM] adjustments have been performed** • **After the [ADF SUB ZOOM] adjustments have been performed**
Adjustment Specification	• Adjust the width of C in the copy of the test pattern1 so that the following specification is met. • 20 ± 2.5 mm  4139F3C547DA
Adjustment Range	• -5.0 (-5.0 mm) ~ “0 (0 mm)” ~ +5.0 (+5.0 mm) • Step: 0.5 mm
Setting/ Procedure	*1.* Print the test pattern1. See P.131 of the main unit service manual. *2.* Enter the [2. ADJUST] menu in the service mode. *3.* Select [ADF SUB REGIST] of [2. ADJUST] and press the Menu Select key. *4.* Place the test pattern1 into the Automatic Document Feeder and make a test copy. **NOTE** • **The test pattern1 should be positioned vertically.** • **Use A4 or Letter paper loaded into tray1 to make the test copy.** *5.* Check that the width of C in the copy of the test pattern are shifted. If the width of C is out of specification, adjust it according to the following procedure. *6.* Press the Menu Select key. *7.* Using the ▲/▼ key, change the setting value and then press the Menu Select key. *8.* Place the test pattern1 into the Automatic Document Feeder. Then, make a test copy again and check it.
Adjustment Instructions	• If the width of C in the test pattern is longer than the specified width ..... Increase the setting. • If the width of C in the test pattern is shorter than the specified width ..... Decrease the setting.

6. Mechanical adjustment

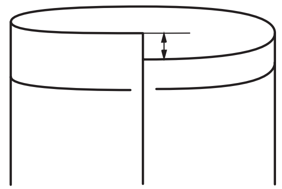
6.1 Leading edge skew adjustment

NOTE
- **This adjustment should be made when image skew occurs.**



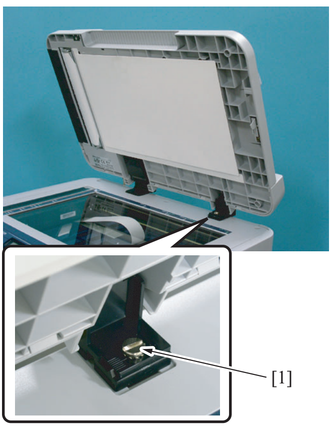
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1. Print the test pattern1.
   See P.137 of the main body service manual.
2. Load the chart in the Auto Document Feeder Unit and make five 1-sided copies of the chart.



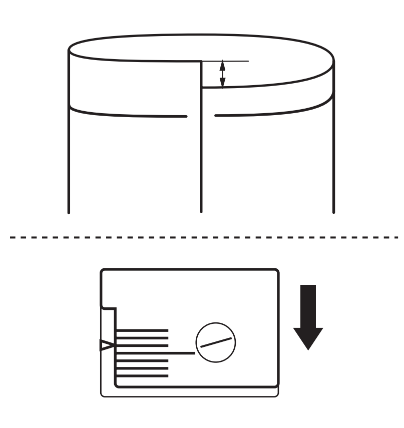
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3. Align each copy sample as shown and check the deviation.
4. If the deviation is outside the specified range, perform the adjustment below.
   Specification: 0 ± 1.0 mm



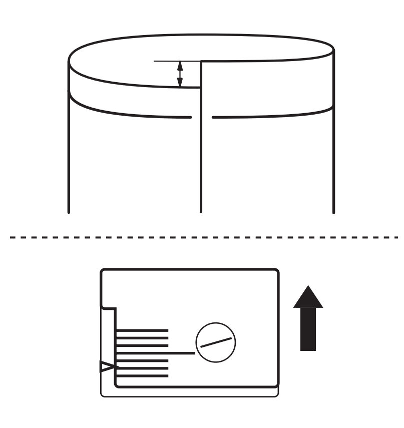
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5. Loosen the one screw [1] in the back to the right.



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6. If the deviation is as shown to the left Move the graduations of the duplexing document feeder to the front.
7. Tighten the screw that has been loosened in step 5.



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8. If the deviation is as shown to the left Move the graduations of the duplexing document feeder to the back.
9. Tighten the screw that has been loosened in step 5.

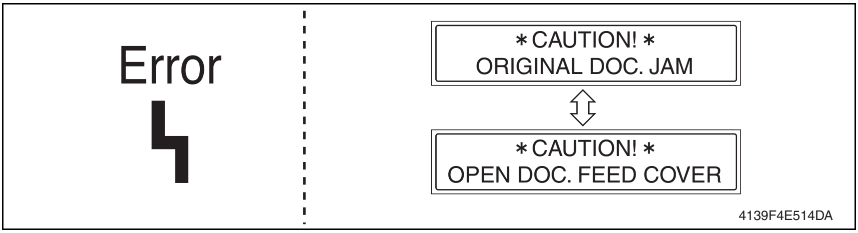
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Troubleshooting

7. Jam display

7.1 Misfeed display

- When a media misfeed occurs, the printer shows the corresponding media misfeed status by means of the Error indicator on the control panel or LCD display.

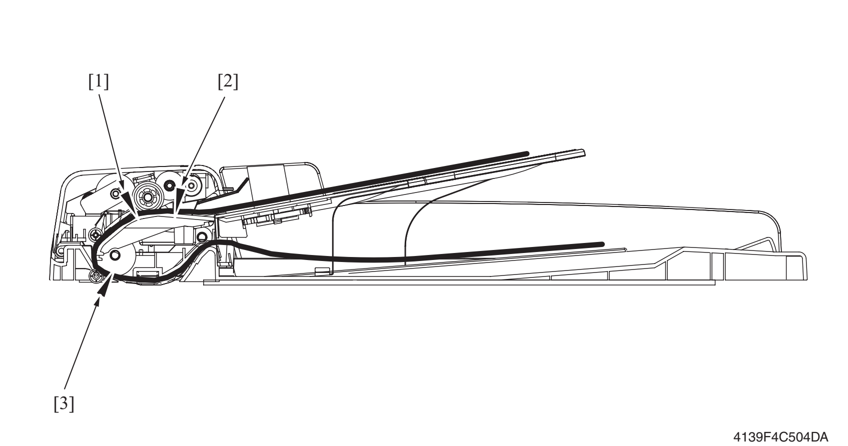


Display	Misfeed Location	Misfeed processing location	Action
CAUTION! ORIGINAL DOC. JAM ⇳ *CAUTION!* OPEN DOC. FEED COVER	Document feeding section	Top cover	P.26
	Document transport section		P.27
	Document exit section		P.28

7.1.1 Misfeed display resetting procedure

- Open the corresponding cover, clear the sheet of paper misfeed, and close the cover.

7.2 Sensor layout



[1]	Paper feed sensor	PS2
[2]	Original detection sensor	PS1
[3]	Paper leading edge detection sensor	PS3

7.3 Solution

7.3.1 Initial check items

- When a media misfeed occurs, check the following:

Check item	Action
Does the media meet product specifications?	Change the media.
Is the media curled, wavy, or damp.	Change the media. Instruct the user in correct media storage.
Is a foreign object present along the media path, or is the media path deformed or worn?	Clean or change the media path.
Are the rolls/rollers dirty, deformed, or worn?	Clean or change the defective roll/roller.
Are the edge guide and trailing edge stop at the correct position to accommodate paper?	Set as necessary.
Are the actuators operational?	Correct or change the defective actuator.

7.3.2 Misfeed at the document feeding section

A. Detection timing

Type	Description
Detection of misfeed at the document feeding section	The paper feed sensor (PS2) is not unblocked even after the lapse of a predetermined period of time after the main motor (M1) has been energized.
Detection of paper left at the document feeding section	The paper feed sensor (PS2) is unblocked when the power switch is turned ON, the cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Main motor (M1) Paper feed sensor (PS2)	DF control board (DFCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items.	—	—
2	Check the DFCB connector for proper connection and correct as necessary.	—	—
3	M1 operation check.	DFCB PA01DFCB-1 to 4 (Pulse Output)	F-14
4	PS2 sensor check.	DFCB PA06DFCB-1 (ON)	F-13
5	Change DFCB.	—	—

7.3.3 Misfeed at the document transport section

A. Detection timing

Type	Description
Detection of misfeed at the document transport section	The paper leading edge detection sensor (PS3) is not blocked even after the lapse of a predetermined period of time after the paper feed sensor (PS2) has been unblocked.
Detection of paper left at the document transport section	The paper feed sensor (PS2) is unblocked and the paper leading edge detection sensor (PS3) is blocked when the power switch is turned ON, the cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Main motor (M1) Paper feed sensor (PS2) Paper leading edge detection sensor (PS3)	DF control board (DFCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items.	—	—
2	Check the DFCB connector for proper connection and correct as necessary.	—	—
3	M1 operation check.	DFCB PA01DFCB-1 to 4 (Pulse Output)	F-14
4	PS2 sensor check.	DFCB PA06DFCB-1 (ON)	F-13
5	PS3 sensor check.	DFCB PA03DFCB-1 (ON)	F-13
6	Change DFCB.	—	—

7.3.4 Misfeed at the document exit section

A. Detection timing

Type	Description
Detection of misfeed at the document exit section	The paper leading edge detection sensor (PS3) is not unblocked even after the lapse of a predetermined period of time after the paper feed sensor (PS2) has been unblocked.
Detection of paper left at the document exit section	The paper leading edge detection sensor (PS3) is blocked when the power switch is turned ON, the cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Paper feed sensor (PS2) Paper leading edge detection sensor (PS3)	DF control board (DFCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items.	—	—
2	Check the DFCB connector for proper connection and correct as necessary.	—	—
3	PS2 sensor check.	DFCB PA06DFCB-1 (ON)	F-13
4	PS3 sensor check.	DFCB PA03DFCB-1 (ON)	F-13
5	Change DFCB.	—	—

KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

Lower Feeder Unit

2007.08

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

Revision history

After publication of this service manual, the parts and mechanism may be subject to change for improvement of their performance.
Therefore, the descriptions given in this service manual may not coincide with the actual machine.

When any change has been made to the descriptions in the service manual, a revised version will be issued with a revision mark added as required.

Revision mark:

- To indicate clearly a section revised, show △1 to the left of the revised section.
  A number within △1 represents the number of times the revision has been made.

- To indicate clearly a section revised, show ▲1 in the lower outside section of the corresponding page.
  A number within ▲1 represents the number of times the revision has been made.

NOTE

Revision marks shown in a page are restricted only to the latest ones with the old ones deleted.

- When a page revised in Ver. 2.0 has been changed in Ver. 3.0:
  The revision marks for Ver. 3.0 only are shown with those for Ver. 2.0 deleted.
- When a page revised in Ver. 2.0 has not been changed in Ver. 3.0:
  The revision marks for Ver. 2.0 are left as they are.

Date	Service manual Ver.	Revision mark	Descriptions of revision
2007/08	1.0	—	Issue of the first edition

CONTENTS

Lower Feeder Unit

General

Maintenance

Troubleshooting

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General

1. Product specifications

A. Type

Name	Add-on 500-sheet paper feed cassette
Type	Front-loading type
Installation	Desk type
Document Alignment	Center

B. Paper

Size	A4/Letter
Type	Plain paper: 60 to 90 g/m² (16 to 24 lb)
Capacity	500 sheets

C. Machine specifications

Power Requirements	DC 24 V ± 10% (supplied from the main unit)
	DC 5 V ± 5%
Max. Power Consumption	12 W
Dimensions	495 (W) × 581 (D) × 138 (H) mm 19.5 (W) × 22.75 (H) × 5.5 (D) inch
Weight	5.0 kg

D. Operating environment

Temperature	10 to 35 °C / 50 to 95 °F (with a fluctuation of 10 °C / 18 °F or less per hour)
Humidity	15% to 85% (with a fluctuation of 20%/h)

NOTE
- **These specifications are subject to change without notice.**

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Maintenance

2. Periodic check

2.1 Maintenance procedure (Periodic parts check)

- Periodically replaced parts are not employed.

3. Other

3.1 Disassembly/Adjustment prohibited items

A. Paint-locked screws

NOTE

- **To prevent loose screws, a screw lock in blue or green series color is applied to the screws.**
- **The screw lock is applied to the screws that may get loose due to the vibrations and loads created by the use of machine or due to the vibrations created during transportation.**
- **If the screw lock coated screws are loosened or removed, be sure to apply a screw lock after the screws are tightened.**

B. Red-painted screws

NOTE

- **The screws which are difficult to be adjusted in the field are painted in red in order to prevent them from being removed by mistake.**
- **Do not remove or loosen any of the red-painted screws in the field. It should also be noted that, when two or more screws are used for a single part, only one representative screw may be marked with the red paint.**

C. Variable resistors on board

NOTE

- **Do not turn the variable resistors on boards for which no adjusting instructions are given in Adjustment/Setting.**

D. Removal of PWBs

⚠ CAUTION

- **When removing a circuit board or other electrical component, refer to “Handling of PWBs” and follow the corresponding removal procedures.**
- **The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.**
- **Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.**

3.2 Disassembly/Assembly list (Other parts)

3.2.1 Disassembly/Assembly parts list

No	Section	Part name	Ref. page
1	Rollers	Paper pick-up roller	P.5
2	Exterior parts	Tray	P.6
3		Rear cover	P.7
4	Units	Lower Feeder unit	P.6
5		Paper pick-up unit	P.7
6	Board and etc	PF drive board	P.8
7	Other parts	Paper pick-up solenoid	P.9
8		Tray set detecting switch	P.10

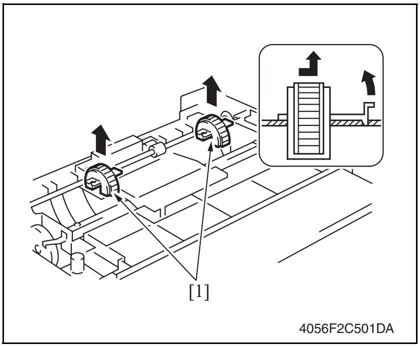
3.2.2 Cleaning parts list

No	Section	Part name	Ref. page
1	Rollers	Paper pick-up roller	P.10

3.3 Disassembly/Assembly procedure

3.3.1 Paper pick-up roller

1. Remove the Lower Feeder Unit from the main body.
   See P.6

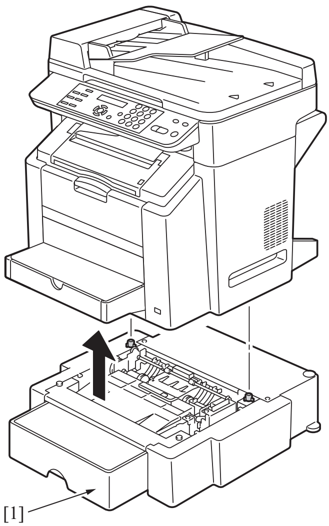


2. Remove two paper pick-up rollers [1].

3.3.2 Lower Feeder Unit

⚠ **CAUTION**

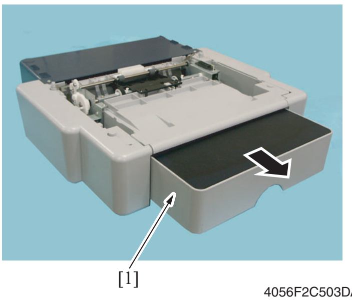
- **Whenever removing or reinstalling the Lower Feeder Unit, be sure first to unplug the power cord of the printer from the power outlet.**



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1. Lift the printer main body and then remove the Lower Feeder Unit [1] from the printer.

3.3.3 Tray

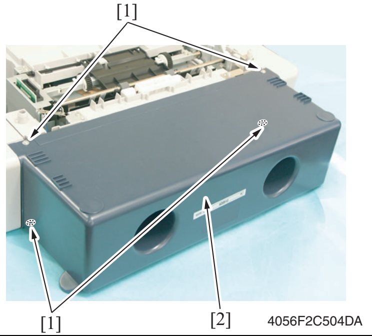


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1. Remove the Lower Feeder Unit from the main body.
2. Slide out the tray [1].

3.3.4 Rear cover

1. Slide out the tray [1].
   See P.6

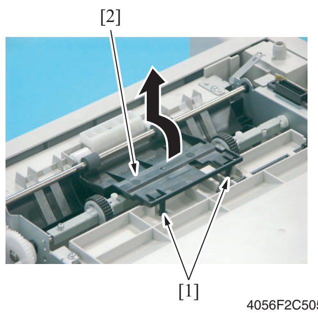


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2. Remove four screws [1], and remove the rear cover [2].

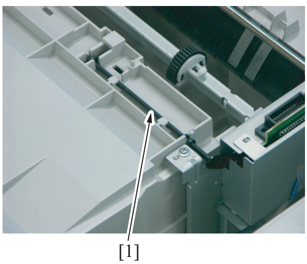
3.3.5 Paper pick-up unit

1. Remove the rear cover.
   See P.7



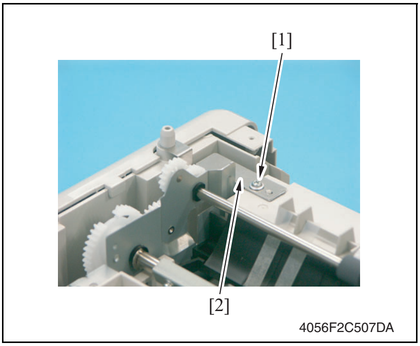
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2. Unlock two tabs [1] and remove the cover [2].

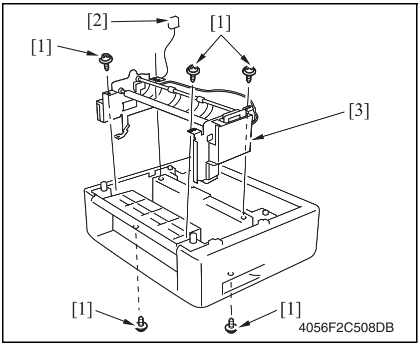


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3. Remove the actuator [1].



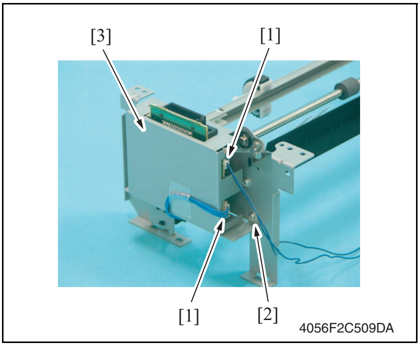
4. Remove the screw [1] and the metal plate [2].



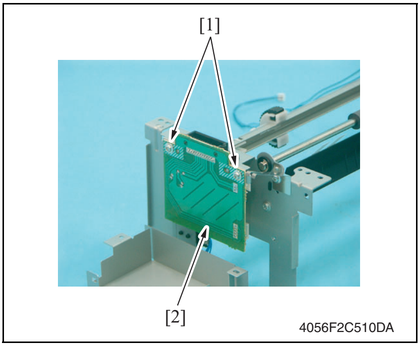
5. Remove five screws [1], disconnect the connector [2] and remove the paper pick-up unit [3].

3.3.6 PF drive board (PFDB)

1. Remove the paper pick-up unit.
   See P.7



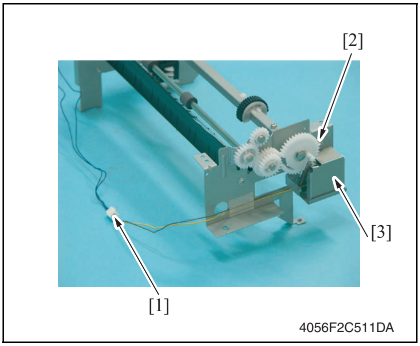
2. Disconnect two connectors [1] from the PF drive board.
3. Remove one screw [2] and the PF drive board protective cover [3].



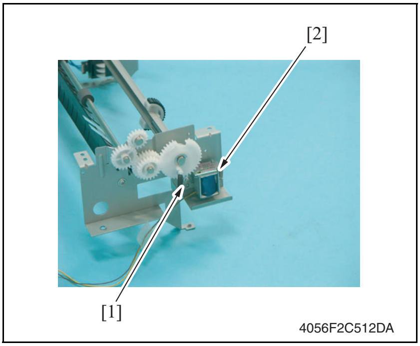
4. Remove two screws [1] and the PF drive board [2].

3.3.7 Paper pick-up solenoid (SD1)

1. Remove the paper pick-up unit.
See P.7



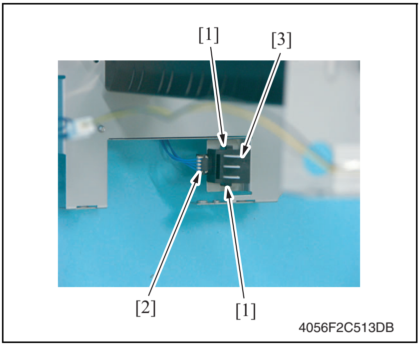
2. Disconnect the connector [1].
3. Remove the screw [2] and the protective cover [3].



4. Remove the screw [1] and the paper pick-up solenoid [2].

3.3.8 Tray set detecting switch (SW1)

1. Remove the paper pick-up unit.
   See P.7



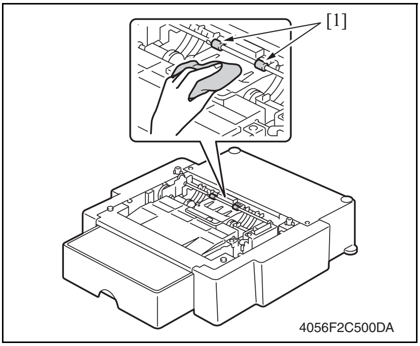
2. Unlock two tabs [1], disconnect the connector [2] and remove the tray set detecting switch [3].

3.4 Cleaning procedure

NOTE
- **The alcohol described in the cleaning procedure is isopropyl alcohol.**

3.4.1 Paper pick-up roller

1. Remove the Lower Feeder Unit from the main body.
   See P.6



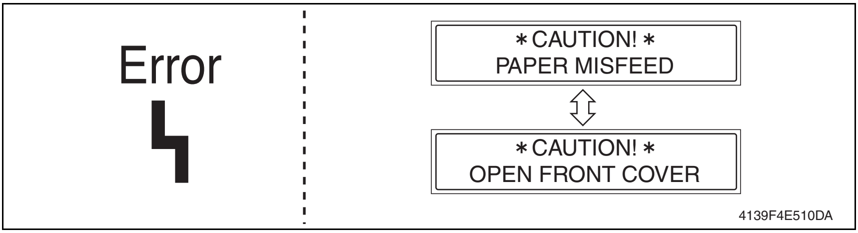
2. Wipe the paper pick-up rollers [1] clean of dirt using a cleaning pad dampened with alcohol.

Troubleshooting

4. Jam display

4.1 Misfeed display

- When a media misfeed occurs, the printer shows the corresponding media misfeed status by means of the Error indicator on the control panel or LCD display.

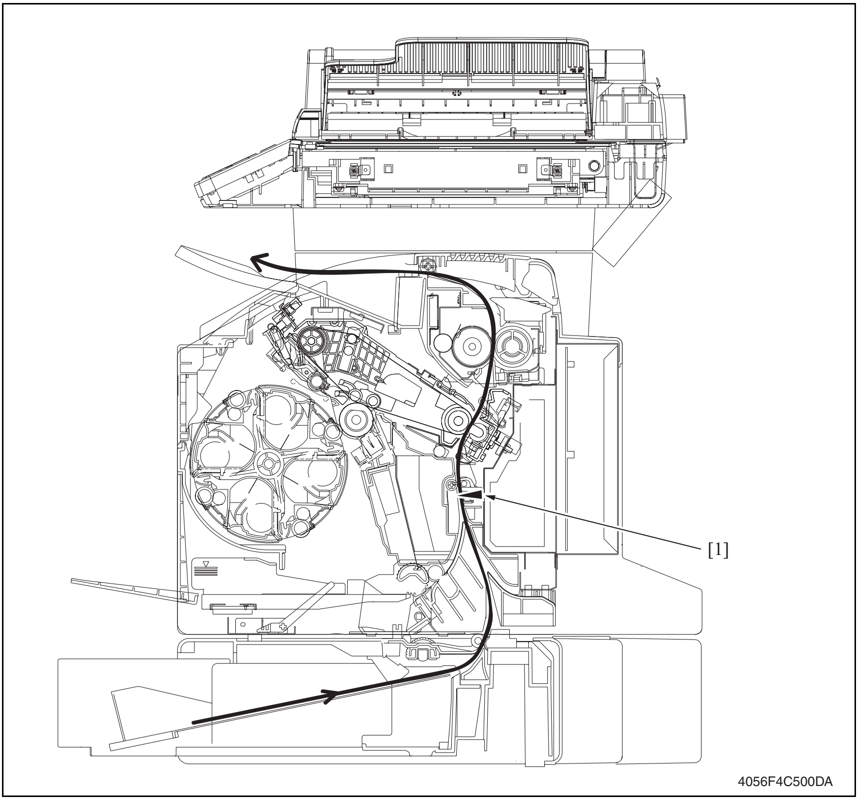


Display	Misfeed location	Misfeed processing location	Action
CAUTION! PAPER MISFEED ⇳ *CAUTION!* OPEN FRONT COVER	Tray 2 paper feed section	Tray 2	P.13

4.1.1 Misfeed display resetting procedure

- Open the corresponding cover, clear the sheet of paper misfeed, and close the cover.

4.2 Sensor layout



[1] Registration sensor PS1

4.3 Solution

4.3.1 Initial check items

- When a media misfeed occurs, check the following:

Check Item	Action
Does the media meet product specifications?	Change the media.
Is the media curled, wavy, or damp.	Change the media. Instruct the user in correct media storage.
Is a foreign object present along the media path, or is the media path deformed or worn?	Clean or change the media path.
Are the rolls/rollers dirty, deformed, or worn?	Clean or change the defective roll/roller.
Are the Edge guide and trailing edge stop at the correct position to accommodate paper?	Set as necessary.
Are the actuators operational?	Correct or change the defective actuator.

4.3.2 Misfeed at Tray 2 paper feed section

A. Detection Timing

Type	Description
Detection of mis-feed at tray 2 paper feed section	The leading edge of the paper does not block the registration sensor (PS1) even after the lapse of a predetermined period of time after the paper pick-up solenoid (SD1) has been energized.

B. Action

Relevant electrical parts	
Registration sensor (PS1) Paper pick-up solenoid (SD1)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items.	—	—
2	Check the PRCB connector for proper con-nection and correct as necessary.	—	—
3	PS1 sensor check.	PRCB PJ12PRCB-3 (ON)	J to K-2
4	SD1 operation check.	PFDB PJ22PFDB-2 (REM)	F-4
5	Change PRCB.	—	—

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KONICA MINOLTA

SERVICE MANUAL FIELD SERVICE

Duplex Option

2007.08

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

Revision history

After publication of this service manual, the parts and mechanism may be subject to change for improvement of their performance.
Therefore, the descriptions given in this service manual may not coincide with the actual machine.

When any change has been made to the descriptions in the service manual, a revised version will be issued with a revision mark added as required.

Revision mark:

- To indicate clearly a section revised, show △1 to the left of the revised section.
  A number within △1 represents the number of times the revision has been made.

- To indicate clearly a section revised, show ▲1 in the lower outside section of the corresponding page.
  A number within ▲1 represents the number of times the revision has been made.

NOTE
Revision marks shown in a page are restricted only to the latest ones with the old ones deleted.
- When a page revised in Ver. 2.0 has been changed in Ver. 3.0:
  The revision marks for Ver. 3.0 only are shown with those for Ver. 2.0 deleted.
- When a page revised in Ver. 2.0 has not been changed in Ver. 3.0:
  The revision marks for Ver. 2.0 are left as they are.

2007/08	1.0	—	Issue of the first edition
Date	Service manual Ver.	Revision mark	Descriptions of revision

CONTENTS

Duplex Option

General

Maintenance

Troubleshooting

Duplex Option
General
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Troubleshooting

General

1. Product specifications

A. Type

Name	Duplex Option
Type	Switchback and Circulating Duplex Unit
Installation	Mounted on the right side door of main unit
Reversing System	Exit Roller switchback
Conveyance system	Rubber roller + driven rolls
Document Alignment	Center

B. Paper type

Paper Size	A4/Letter/Legal
Paper Type	• Plain paper: 60 to 90 g/m^2 (16 to 24 lb) • Recycled paper: 60 to 90 g/m^2 (16 to 24 lb)

C. Machine specifications

Power Requirements	DC 24 V ± 10% (supplied from the main unit)
	DC 5 V ± 5% (supplied from the main unit)
Max. Power Consumption	42 W
Dimensions	370 (W) × 153 (D) × 318 (H) mm 14.25 (W) × 6 (D) × 12.75 (H) inch
Weight	Approx. 2.4 kg (5.25 lb)

D. Operating environment

Temperature	10 to 35 °C / 50 to 95 °F (with a fluctuation of 10 °C / 18 °F or less per hour)
Humidity	15% to 85% (with a fluctuation of 20%/h)

NOTE
- **These specifications are subject to change without notice.**

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Maintenance

2. Periodical check

2.1 Maintenance procedure (Periodical check parts)

- Periodically replaced parts are not employed.

3. Other

3.1 Disassembly/Adjustment prohibited items

A. Paint-locked screws

NOTE

- **To prevent loose screws, a screw lock in blue or green series color is applied to the screws.**
- **The screw lock is applied to the screws that may get loose due to the vibrations and loads created by the use of machine or due to the vibrations created during transportation.**
- **If the screw lock coated screws are loosened or removed, be sure to apply a screw lock after the screws are tightened.**

B. Red-painted screws

NOTE

- **The screws which are difficult to be adjusted in the field are painted in red in order to prevent them from being removed by mistake.**
- **Do not remove or loosen any of the red-painted screws in the field. It should also be noted that, when two or more screws are used for a single part, only one representative screw may be marked with the red paint.**

C. Variable resistors on board

NOTE

- **Do not turn the variable resistors on boards for which no adjusting instructions are given in Adjustment/Setting.**

D. Removal of PWBs

⚠ CAUTION

- **When removing a circuit board or other electrical component, refer to “Handling of PWBs” and follow the corresponding removal procedures.**
- **The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.**
- **Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.**

3.2 Disassembly/Assembly/Cleaning list (Other parts)

3.2.1 Disassembly/Assembly parts list

No	Section	Part name	Ref. page
1	Unit	Duplex Option	P.5
2	Exterior parts	Right cover	P.8
3	Board and etc.	AD drive board	P.8
4	Other parts	Cooling fan motor	P.9
5		Transport motor	P.12
6		Reverse motor	P.12
7		Registration solenoid	P.13

3.2.2 Cleaning parts list

No	Section	Part name	Ref. page
1	Rollers	Transport roller	P.14

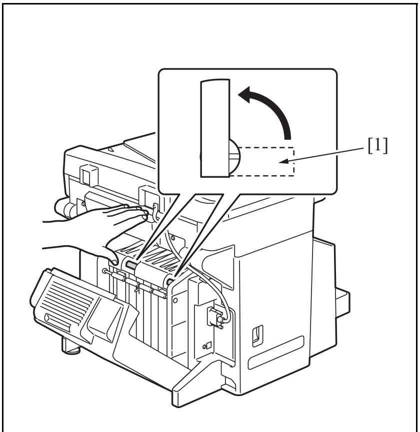
3.3 Disassembly/Assembly procedure

3.3.1 Duplex Option

⚠ **CAUTION**

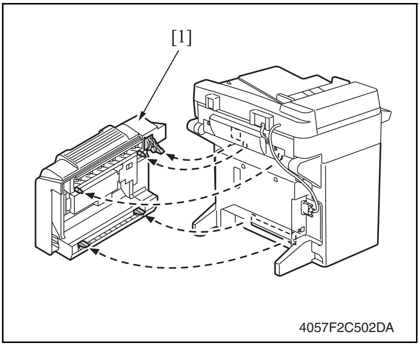
- **Whenever removing or reinstalling the Duplex Option, be sure first to unplug the power cord of the printer from the power outlet.**

A. Removal Procedure



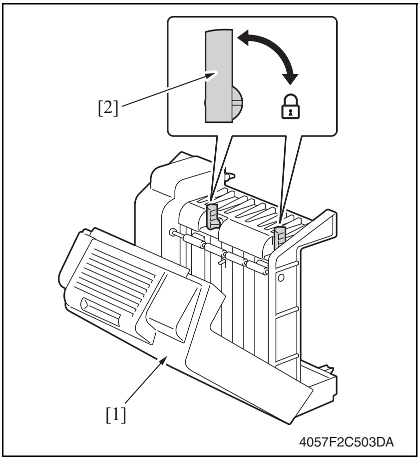
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1. Open the duplex option door.
2. Turn the two locking knobs [1] to unlock the Duplex Option.

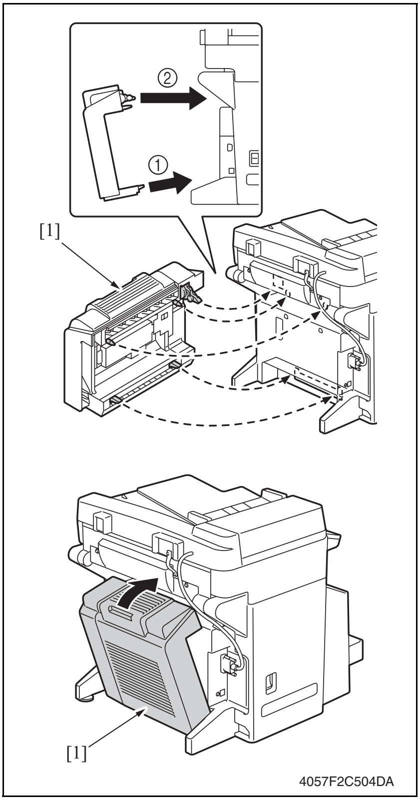


3. Remove the Duplex Option [1].

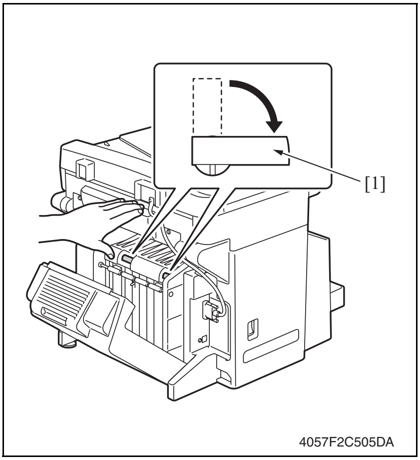
B. Reinstall Procedure



1. Open the duplex option door [1] and turn the two locking knobs [2] to unlock the Duplex Option.



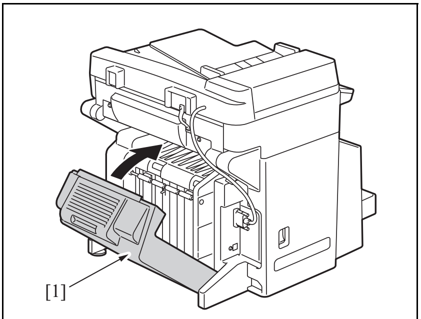
2. Mount the Duplex Option [1] onto the printer main body.



3. Turn the two locking knobs [1] to lock the Duplex Option into position.

NOTE

- **When locking the Duplex Option into position, be sure to hold the unit with a hand and, at the same time, press it up against the printer main body.**



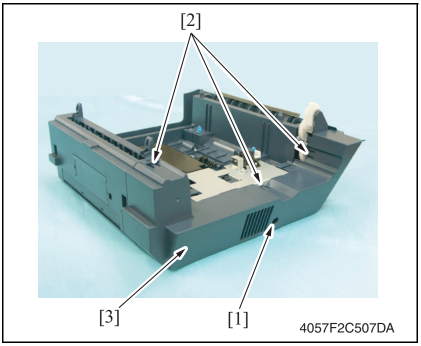
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NOTE

- **After the Duplex Option has been locked into position, check that the two locking knobs are in the correct locked position.**

4. Close the duplex option door [1].

3.3.2 Right cover

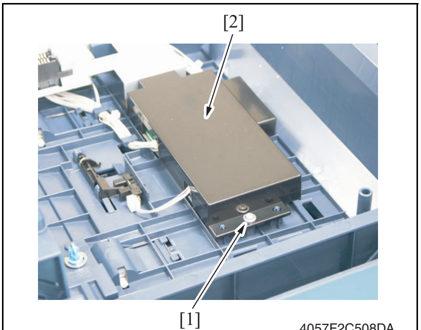


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1. Remove the screw [1], unlock three tabs [2] and remove the right cover [3].

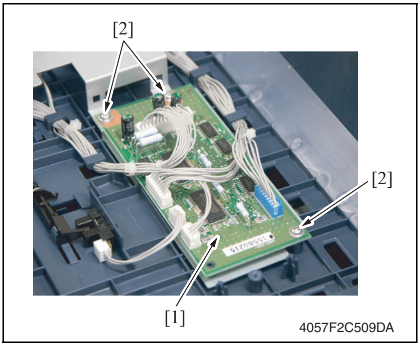
3.3.3 AD drive board (ADDB)

1. Remove the right cover.
   See P.8



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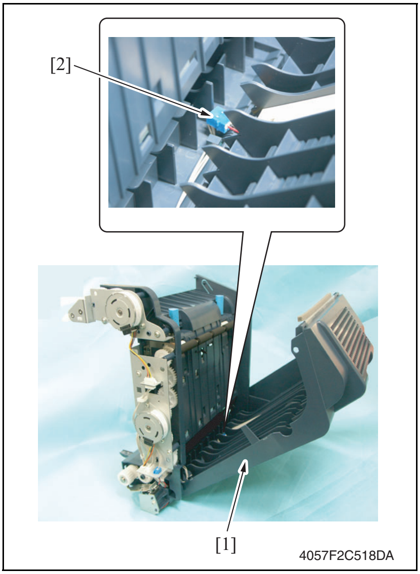
2. Remove the screw [1] and the AD drive board cover [2].



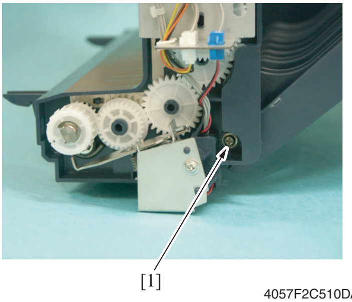
3. Disconnect all connectors from the AD drive board [1].
4. Remove three screws [2] and the AD drive board [1].

3.3.4 Cooling fan motor (FM1)

1. Remove the right cover.
   See P.8

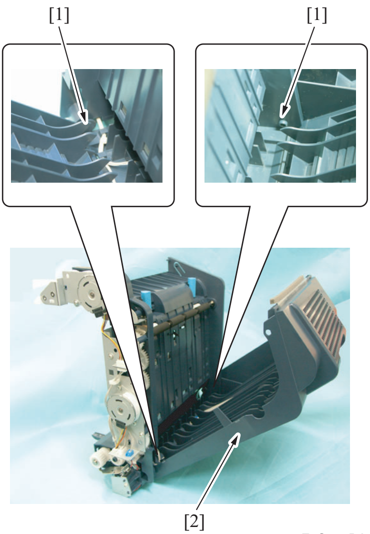


2. Open the duplex option door [1] and disconnect the connector [2].



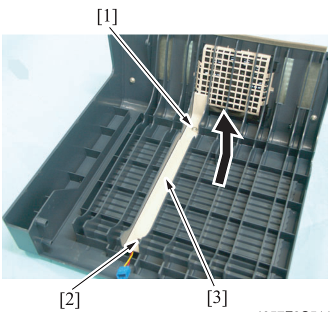
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3. Remove the screw [1].



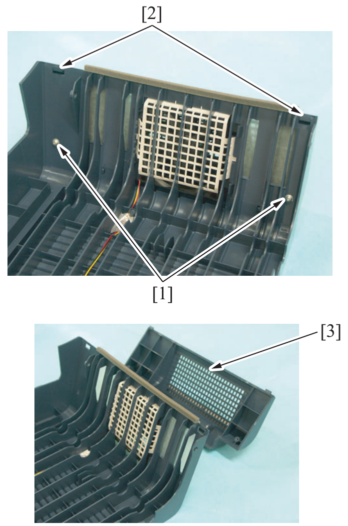
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4. Unhook the two dowel pins [1] and remove the duplex option door [2].



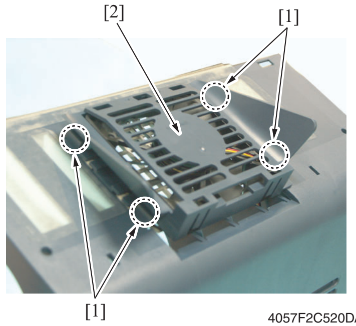
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5. Remove the screw [1], unlock the tab [2] and remove the harness cover [3].



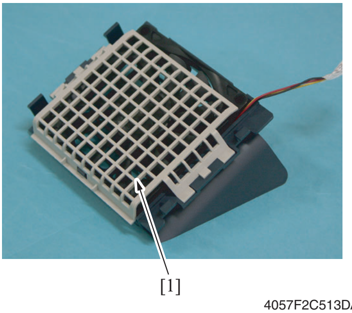
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6. Remove two screws [1], unlock two tabs [2] and remove the duplex door upper cover [3].



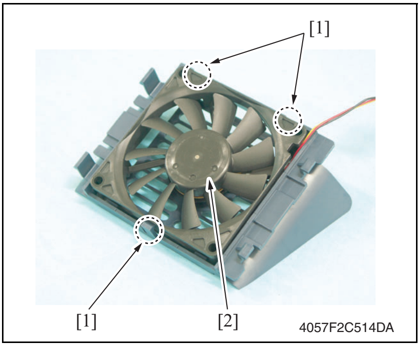
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7. Unlock four tabs [1] and remove the cooling fan motor assy [2].



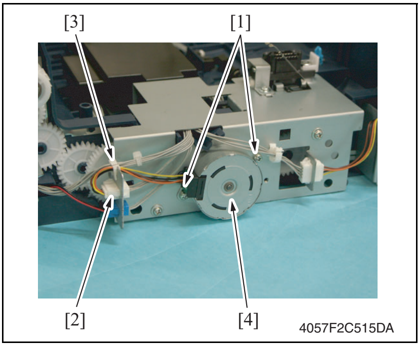
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8. Remove the cooling fan motor cover [1].



9. Unlock three tabs [1] and remove the cooling fan motor [2].

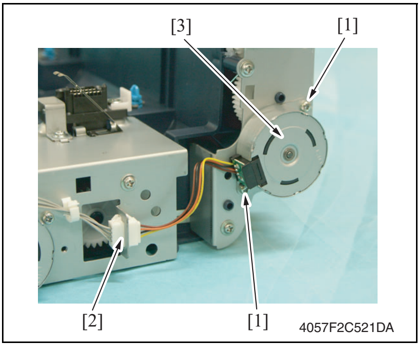
3.3.5 Transport motor (M1)



1. Remove the right cover.
   See P.8
2. Remove two screws [1] and disconnect the connector [2].
3. Remove the harness from the harness holder [3] and then remove the transport motor [4].

3.3.6 Reverse motor (M2)

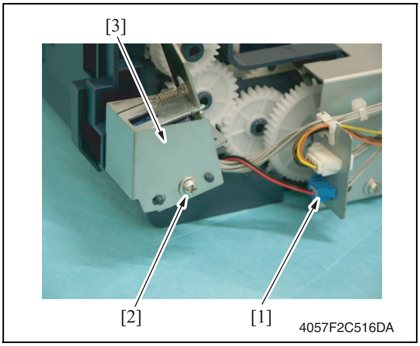
1. Remove the right cover.
   See P.8



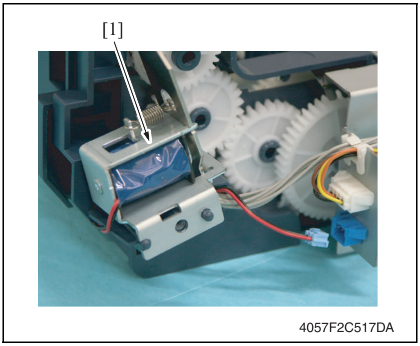
2. Remove two screws [1], disconnect the connector [2], and remove the reverse motor [3].

3.3.7 Registration solenoid (SD1)

1. Remove the right cover.
See P.8



2. Disconnect the connector [1].
3. Remove the screw [2] and the protective cover [3].



4. Remove the registration solenoid [1].

3.4 Cleaning procedure

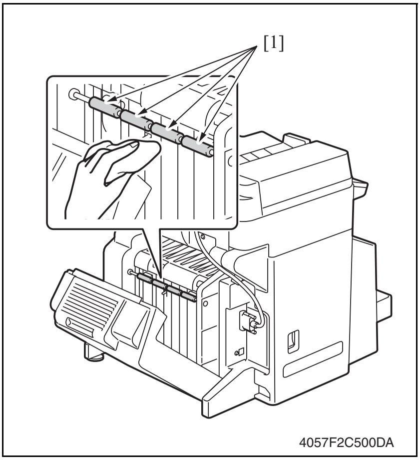
NOTE

- **The alcohol described in the cleaning procedure is isopropyl alcohol.**

3.4.1 Transport roller

A. Cleaning procedure

1. Open the duplex door.



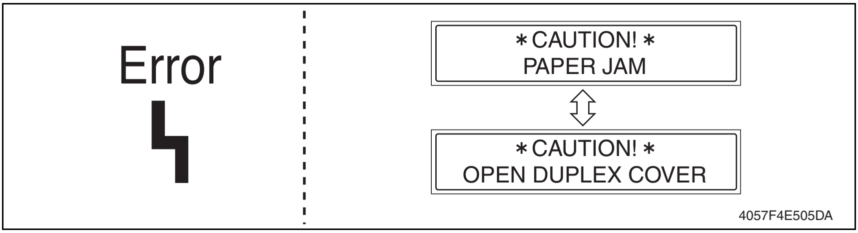
2. Using a cleaning pad dampened with alcohol, wipe the transport rollers [1] clean of dirt.

Troubleshooting

4. Jam display

4.1 List of display messages

- When a media misfeed occurs, the printer shows the corresponding media misfeed status by means of the Error indicator on the control panel or LCD display.

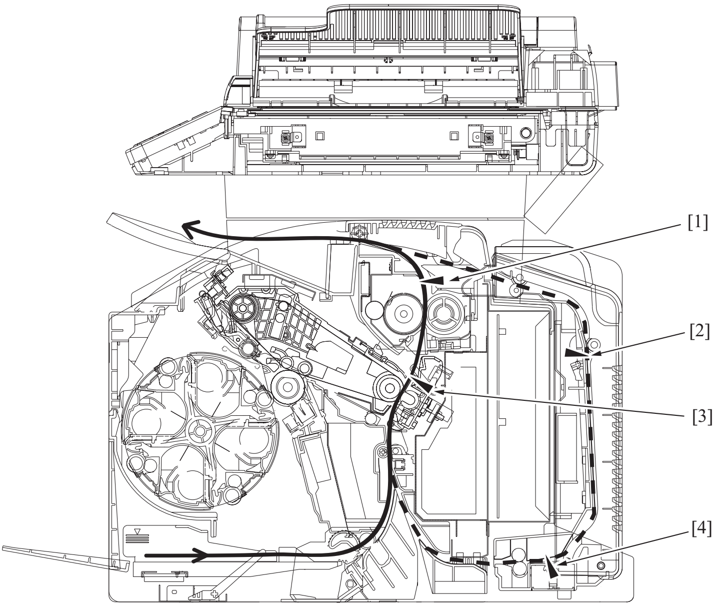


Display	Misfeed location	Misfeed clearing location	Ref. page
CAUTION! PAPER JAM ⇳ *CAUTION!* OPEN DUPLEX COVER	Duplex Option reverse drive/storage section	Duplex option door	P.17
	Duplex Option paper feed section		P.18

4.1.1 Misfeed display resetting procedure

- Open the relevant door, clear the sheet of misfeed paper, and close the door.

4.2 Sensor layout



[1]	Exit sensor	PS7	[3]	Fusing paper loop sensor	PS8
[2]	Transport sensor	PS3	[4]	Paper loop sensor	PS1

4.3 Solution

4.3.1 Initial check items

- When a media misfeed occurs, check the following:

Check Item	Action
Does the media meet product specifications?	Change the media.
Is the media curled, wavy, or damp.	Change the media. Instruct the user in correct media storage.
Is a foreign object present along the media path, or is the media path deformed or worn?	Clean or change the media path.
Are the rolls/rollers dirty, deformed, or worn?	Clean or change the defective roll/roller.
Are the edge guide and trailing edge stop at the correct position to accommodate paper?	Set as necessary.
Are the actuators operational?	Correct or change the defective actuator.

4.3.2 Misfeed at duplex option reverse drive/storage section

A. Detection timing

Type	Description
Detection of misfeed at duplex option reverse drive/storage section	The transport sensor (PS3) is not unblocked even after the lapse of a predetermined period of time after the reverse motor (M2) has been energized for reverse drive.

B. Action

Relevant electrical parts	
Transport sensor (PS3) Transport motor (M1) Reverse motor (M2)	AD drive board (ADDB) Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items.	—	—
2	Check the PS3 sensor.	ADDB PJ5ADDB-3 (ON)	B-4
3	Check M3 for correct operation.	ADDB PJ2ADDB-1 to 4 (Pulse Output)	B-4
4	Check M2 for correct operation.	ADDB PJ2ADDB-5 to 8 (Pulse Output)	B-5
5	Change ADDB.	—	—
6	Change PRCB.	—	—

4.3.3 Misfeed at duplex option paper feed section

A. Detection timing

Type	Description
Detection of misfeed at duplex option paper feed section	The paper loop sensor (PS1) is not unblocked even after the lapse of a predetermined period of time after a duplex paper feed sequence has been started.
	The paper loop sensor (PS1) is not blocked even after the lapse of a predetermined period of time after a duplex paper feed sequence has been started.
	The transport sensor (PS3) is not blocked even after the lapse of a predetermined period of time after a duplex paper feed sequence has been started.

B. Action

Relevant electrical parts	
Paper loop sensor (PS1) Transport sensor (PS3) Transport motor (M1)	AD drive board (ADDB) Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items.	—	—
2	Check the PS1 sensor.	ADDB J3ADDB-3 (ON)	G-4
3	Check the PS3 sensor.	ADDB PJ5ADDB-3 (ON)	B-4
4	Check M1 for correct operation.	ADDB PJ2ADDB-1 to 4 (Pulse Output)	B-4
5	Change ADDB.	—	—
6	Change PRCB.	—	—

5. Error codes

5.1 Trouble code

5.1.1 Trouble code list

Code	Item	Detection Timing
0FH	Duplex cooling fan motor malfunction	• The fan motor lock signal remains HIGH for a predetermined consecutive period of time while the power supply cooling fan motor remains energized.

5.2 How to reset

- To reset the printer after a malfunction has occurred, turn the power switch OFF and then ON again.

5.3 Solution

5.3.1 0FH: Duplex cooling fan motor malfunction

Relevant electrical parts	
Cooling fan motor (FM1) Printer control board (PRCB)	DC power supply1 (DCPU1)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the FM1 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	FM1 operation check.	ADDB PJ3ADDB-6 (REM) ADDB PJ3ADDB-8 (LOCK)	G-4 to 5
5	Change PRCB.	—	—
6	Change DCPU1.	—	—

6. Miscellaneous malfunctions

6.1 List of miscellaneous malfunctions

Display	Description
SIZE/TYPE ERROR DUPLEX	• A 2-sided print cycle is run using the type and size of paper that are not good for 2-sided printing.

6.2 Duplex size/Type error

Relevant electrical parts	
AD drive board (ADDB)	Printer control board (PRCB) Image processing board (IPB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the printer driver settings.	—	—
2	Check the ADDB connector for proper connection and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	Check the IPB connector for proper connection and correct as necessary.	—	—
5	Change ADDB.	—	—
6	Change PRCB.	—	—
7	Change IPB.	—	—

Use of this manual should be strictly supervised to avoid disclosure of confidential information.

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